



Zara M. Patel, MD

Professor of Otolaryngology - Head & Neck Surgery (OHNS) and, by courtesy, of Neurosurgery

Otolaryngology (Head and Neck Surgery)

CLINICAL OFFICE (PRIMARY)

- **Stanford Dept of Otolaryngology, Head and Neck Surgery**

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Bio

BIO

Dr. Zara M. Patel is Director of Endoscopic Skull Base Surgery, Director of the Stanford Initiative to Cure Smell and Taste Loss, Director of the Neurosinology - Advanced Sinus and Skull Base Surgery Fellowship, and a Professor of Otolaryngology and, by courtesy, of Neurosurgery at Stanford. She was born and raised in St. Louis, completed her MD at the Oregon Health and Sciences University in Portland, Oregon and completed her residency training in otolaryngology at Mount Sinai Medical Center in New York, NY. After pursuing fellowship training in rhinology and endoscopic skull base surgery at Stanford University, she joined the Emory University faculty in Atlanta in 2011. After four years, she was recruited back to the West coast to rejoin the department here at Stanford University in 2015.

Dr. Patel is an expert in advanced endoscopic sinus and skull base surgery. She treats patients with a wide variety of rhinologic complaints, including chronic sinus infection or inflammation, sinus disease that has failed medical therapy, sinus disease that has failed prior surgical therapy, cerebrospinal fluid leaks, benign and malignant sinus and skull base tumors, as well as olfactory disorders.

She has served as Chair of the Education Committee and Member of the Board of Directors for the American Rhinologic Society, Chair of the Rhinology and Allergy Education Committee for the American Academy of Otolaryngology - Head and Neck Surgery, and has developed a multitude of educational materials for both physicians and patients to help them better understand rhinologic disorders. She is passionate about educating patients to allow them to make the best decisions about their own care, leading to better outcomes.

Dr. Patel has published widely in topics such as avoiding complications in endoscopic sinus surgery, chronic rhinosinusitis in the immunosuppressed patient population, new techniques for endoscopic skull base surgery, artificial intelligence and olfactory dysfunction. She continues to perform research in these areas, and is currently collaborating with neuroscientists and engineers to develop technology that she hopes will eventually help cure patients with smell loss, and potentially even help those with neurodegenerative disorders, such as Alzheimer's and Parkinson's disease.

CLINICAL FOCUS

- Endoscopic Sinus and Skull Base Surgery
- Chronic Rhinosinusitis
- Benign and Malignant Sinus and Skull Base Tumors
- Olfaction and Olfactory Disorders
- Cerebrospinal Fluid Leaks
- Sinusitis
- Nasal Obstruction
- Epiphora, Orbital Tumors, Orbital decompression
- Pituitary Surgery
- Rhinology
- Otolaryngology

ACADEMIC APPOINTMENTS

- Professor - University Medical Line, Otolaryngology (Head and Neck Surgery)
- Professor - University Medical Line (By courtesy), Neurosurgery
- Member, Bio-X
- Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS

- Director of the Stanford Initiative to Cure Smell and Taste Loss, Department of Otolaryngology - Head and Neck Surgery, (2025- present)
- Director of Endoscopic Skull Base Surgery, Department of Otolaryngology - Head and Neck Surgery, (2017- present)
- Director Neurorhinology - Advanced Sinus and Skull Base Surgery Fellowship, Department of Otolaryngology-Head and Neck Surgery, Stanford University, (2015- present)

HONORS AND AWARDS

- Award for Distinguished Service, American Academy of Otolaryngology - Head and Neck Surgery (2024)
- Presidential Citation for Service, American Rhinologic Society (2018, 2021, 2022)
- Fellow, American Rhinologic Society (2016)
- Woodruff Teaching Award, Emory University (2014)
- Mount Sinai Resident Teaching Award, Mount Sinai Medical School (2010)
- First Place, New York City Otolaryngology Resident Research Day (2008)
- Leadership Grant, American Academy of Otolaryngology (2007, 2008)
- Campbell Scholarship, Oregon Health and Sciences University (2004)
- Inductee, National Medical Honors Society, Alpha Omega Alpha (2004)
- OHSU Rose Award, Oregon Health and Sciences University (2003)
- Miller Memorial Fund Scholarship, University of Missouri (2001-2003)
- Hughes Academic Achievement Award, State of Missouri (2000)
- Inductee, National Honor Society, Phi Bet Kappa (2000)
- Inductee, National Honor Society, Phi Eta Sigma (1998)
- Bright Flight Scholarship, University of Missouri (1997-2001)

- National Merit Finalist, National Merit Scholarship Corporation (1997)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Chair, Rhinology and Allergy Education Committee, American Academy of Otolaryngology and Head and Neck Surgery (2021 - 2024)
- Member, Board of Directors, American Rhinologic Society (2018 - 2021)
- Member, Scientific Program Committee, American Academy of Otolaryngology (2016 - 2021)
- Chair, Education Committee, American Rhinologic Society (2014 - 2017)
- Member, Adult Sinusitis Guideline Committee, American Academy of Otolaryngology (2014 - 2015)
- Member, Rhinology and Allergy Education Committee, American Academy of Otolaryngology (2013 - 2021)
- Member, Program Committee, American Rhinologic Society (2012 - 2016)
- Member, Legislative Representatives Committee, Board of Governors, American Academy of Otolaryngology (2012 - 2016)

PROFESSIONAL EDUCATION

- Residency: Icahn School of Medicine at Mount Sinai (2010) NY
- Internship: Icahn School of Medicine at Mount Sinai (2006) NY
- Board Certification: Otolaryngology, American Board of Otolaryngology (2011)
- Fellowship: Stanford School of Medicine (2011) CA
- Medical Education: Oregon Health Science University (2005) OR

PATENTS

- Zara Patel. "United States Patent 20240024664 Methods of Treatment and Devices for Repair of Inflammatory, Neurotransmitter, Endocrine or Metabolic Issues", Leland Stanford Junior University, Jan 25, 2024

LINKS

- Stanford Initiative to Cure Smell and Taste Loss: <https://med.stanford.edu/smell.html>
- Donate to support Dr. Patel's Research (Please specify Dr. Zara Patel on form): <https://med.stanford.edu/ohns/contact/gift.html>
- Get a Second Opinion: <https://stanfordhealthcare.org/second-opinion/overview.html>
- Google Scholar: <https://scholar.google.com/citations?user=CqVolWoAAAAJ>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Smell and Taste Disorders: The only US based surgeon-scientist who has run multiple randomized controlled trials innovating new and effective treatment options for smell loss. Current line of research is in endoscopic electrical recording and stimulation of the olfactory system.

Artificial Intelligence: Investigating the ability for automated machine learning to distinguish benign from malignant tumors in the sinonasal region.

Chronic Sinusitis and Endoscopic Sinus Surgery: Investigating an array of medical and surgical treatment options, evaluating the treatment paradigm for patients with immunocompromise.

Endoscopic Skull Base Surgery: Innovating new methodologies for skull base reconstruction and surgical techniques that can improve patient outcomes.

CLINICAL TRIALS

- Randomized Clinical Trial of Intranasal Injection of Platelet-Rich Plasma for Treatment of Parosmia, Recruiting

- Physician/Patient Choice of Either High-Dose Recombinant Interferon Alfa-2B or Ipilimumab, Versus Pembrolizumab in Treating Patients With Stage III-IV High Risk Melanoma That Has Been Removed by Surgery, Not Recruiting

Publications

PUBLICATIONS

- **Minimal Clinically Important Difference of the Sinonasal Outcome Test in Sinonasal Malignancy.** *The Annals of otology, rhinology, and laryngology*
Maoz, S. L., Lee, M., Fischer, J. L., Choby, G., Hwang, P. H., Wang, E. W., Kuan, E. C., Adappa, N. D., Geltzeiler, M., Getz, A. E., Humphreys, I. M., Le, C. H., Pinheiro-Neto, et al
2026: 34894261428393
- **Determining the Minimal Clinically Important Difference of the 40-Item Smell Identification Test in People With Cystic Fibrosis** *INTERNATIONAL FORUM OF ALLERGY & RHINOLOGY*
Oh, E., Miller, J. E., Lee, M. J., Zemke, A., Baraghoshi, D., Strand, M. J., Alt, J. A., Bodner, T. E., Chang, M., Chowdhury, N. I., Eshaghian, P. H., Getz, A. E., Goralski, et al
2026
- **Artificial Intelligence-Based Quantification of Indocyanine Green Fluorescence for Standardized Perfusion Assessment in Endoscopic Skull Base Surgery** *JOURNAL OF NEUROLOGICAL SURGERY PART B-SKULL BASE*
Sethi, S., Daum, R., Grimm, D., Yong, M., Hosseinzadeh, F., Lee, C. K., Fernandez-Miranda, J. C., Nayak, J. V., Patel, Z. M., Hwang, P. H., Chang, M. T.
2026
- **Added Sinonasal Morbidity of Transpterygoid Approach versus Transsphenoidal Approach: A Case-Controlled Analysis.** *Journal of neurological surgery. Part B, Skull base*
Saroya, J., Huang, A. E., Hooseinzadeh, F., Lee, C. K., Fernandez-Miranda, J., Hwang, P. H., Patel, Z. M., Nayak, J. V., Chang, M. T.
2026; 87 (1): 43-49
- **Outcomes for Sinonasal Undifferentiated Carcinoma (SNUC): An International Multi-Center Retrospective Cohort Study.** *Cancers*
Liu, J., Takahashi, Y., Rehman, U., Turri-Zanoni, M., Mattavelli, D., Counsell, N., Ferrari, M., Rampinelli, V., Vermi, W., Lombardi, D., Saade, R., Park, K. W., Emanuel, et al
2026; 18 (3)
- **The Future of Treating Smell Loss**
Patel, Z. M.
OXFORD UNIV PRESS.2026
- **Predictive Value of Ipratropium Responsiveness on Posterior Nasal Nerve Neurectomy Outcomes in Chronic Rhinitis.** *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*
Maddineni, S., Hwang, P. H., Ayoub, N. F., Patel, Z. M., Nayak, J. V., Chang, M. T.
2025
- **Artificial Intelligence for Endoscopic Surveillance Post-Treatment for Nasopharyngeal Carcinoma: Detection of Recurrence and Osteoradionecrosis.** *International forum of allergy & rhinology*
Levi, L., Huynh, J. D., Wang, Y., Fieux, M., Manavi, M. S., Renteria, A., Sethi, S. K., Ayoub, N., Patel, Z., Nayak, J. V., Hwang, P., Chang, M. T.
2025
- **Distinguishing Suspected Invasive Fungal Sinusitis From Its Mimics: A Clinicopathologic Analysis of Histopathology-Negative Cases.** *International forum of allergy & rhinology*
Idler, B. M., Renteria, A., Liu, D. T., Rubio-Jimenez, I., Levi, L., Nayak, J. V., Patel, Z. M., Chang, M. T., Rahman, M., Hwang, P. H., Ayoub, N. F.
2025
- **Using Indocyanine Green Fluorescence Angiography to Evaluate the Impact of Surgical and Patient Factors on Posterior Septal Artery Perfusion in Endoscopic Skull Base Surgery.** *Journal of neurological surgery. Part B, Skull base*
Daum, R., Grimm, D., Yong, M., Hosseinzadeh, F., Lee, C. K., Fernandez-Miranda, J. C., Nayak, J. V., Patel, Z. M., Hwang, P. H., Chang, M. T.
2025; 86 (6): e2-e7
- **Proton Beam vs Intensity-Modulated Radiotherapy in Olfactory Neuroblastoma.** *JAMA otolaryngology-- head & neck surgery*
Tang, A., Adida, S., Donohue, J., Olson, B., Krippaehne, E., Roozdar, P., Goetschel, K., Gago, G., Almeida, J. P., Champagne, P. O., Fernandez-Miranda, J. C., Gardner, P., Hwang, et al

2025

- **Does Debridement of Intracranial Disease in Acute Invasive Fungal Sinusitis Improve Survival?** *JOURNAL OF NEUROLOGICAL SURGERY PART B-SKULL BASE*
Huang, A. E., Lee, C. K., Nayak, J. V., Hwang, P. H., Patel, Z. M., Fernandez-Miranda, J. C., Chang, M. T.
2025
- **Utilizing a publicly accessible automated machine learning platform to enable diagnosis before tumor surgery.** *Communications medicine*
Hosseinzadeh, F., Liu, G., Tsai, E., Mahmoudi, A., Yang, A., Kim, D., Fieux, M., Levi, L., Abdul-Hadi, S., Adappa, N. D., Alt, J. A., Altartoor, K. A., Banyl, et al
2025; 5 (1): 419
- **Topical Anesthesia and Olfactory Capability: A Pilot Study.** *Laryngoscope investigative otolaryngology*
Fieux, M., Wang, E., Liu, D. T., Patel, Z. M.
2025; 10 (5): e70250
- **Expanded Endoscopic Endonasal Approach for Resection of Abducens Nerve Schwannoma Within the Cavernous Sinus and Posterior Fossa: 2-Dimensional Operative Video.** *Operative neurosurgery (Hagerstown, Md.)*
Asmaro, K., Vigo, V., Kim, L. H., Nernekli, K., Nunez, M. A., Patel, Z. M., Fernandez-Miranda, J. C.
2025
- **Functionality of Pituitary Tumors Impacts Sinonasal Quality of Life Before and After Endoscopic Surgery.** *The Laryngoscope*
Wongworawut, Y., Hwang, P. H., Nayak, J. V., Dodd, R., Fernandez-Miranda, J. C., Patel, Z. M.
2025
- **Multi-scaled transcriptomics of chronically inflamed nasal epithelium reveals immune-epithelial dynamics and tissue remodeling in nasal polyp formation.** *Immunity*
Liao, G., Nakayama, T., Zhu, B., Lee, I. T., Yeung, J., Yeo, Y. Y., Chang, Y., Wang, C., Liao, S. C., Nkosi, D., Renteria, A., Bravo, D. T., Overdeest, et al
2025
- **Is There Utility in Testing Pathologic Specimen for HPV in Sinonasal Inverted Papilloma?** *The Laryngoscope*
Callander, J. K., Patel, Z. M.
2025
- **Role of somatostatin receptor 2 (SSTR2) in pituitary adenomas.** *Clinical and translational medicine*
Power, Y., Liu, J., Rehman, U., Kjerimi, A., Scharfing, V., Counsell, N., Starup-Hansen, J., Newall, N., Lund, V. J., Mohyeldin, A., Fernandez-Miranda, J. C., Lavezo, J., Patel, et al
2025; 15 (8): e70435
- **Comparative Outcomes of Gross Total Resection vs. Subtotal Resection Plus Radiotherapy for Preventing Craniopharyngioma Recurrence: A Meta-Analysis of the Endoscopic Endonasal Approach.** *Cancers*
Bobeff, E. J., Szymid, B., Mlynarski, W., Jouanneau, E., Apra, C., Shen, M., Patel, Z. M., Jaskolski, D. J., Schwartz, T. H.
2025; 17 (15)
- **Patency of the Cavernous Sinus After Medial Wall Resection: An Observational Study** *JOURNAL OF NEUROLOGICAL SURGERY PART B-SKULL BASE*
Renteria, A. E., Fieux, M., Castro, B., Levi, L., Hung, L., Azevedo, A., Lee, C. K., Chang, M. T., Hwang, P. H., Nayak, J., Fischbein, N., Fernandez-Miranda, J., Patel, et al
2025
- **Comparative analysis of AI-generated study guides in otolaryngology education.** *American journal of otolaryngology*
Patel, E. A., Herrmann, P. T., Fleischer, L., Filip, P., Joe, S., Kshirsagar, R. S., Kuan, E. C., Papagiannopoulos, P., Patel, Z. M., Rangarajan, S., Batra, P. S., Tajudeen, B. A.
2025; 46 (5): 104693
- **June 4: International Skull Base Surgery Day.** *Journal of neurological surgery. Part B, Skull base*
Gudis, D. A., Bleier, B. S., Eloy, J. A., Evans, J. J., Fernandez-Miranda, J. C., Gardner, P. A., Geltzeiler, M., Grayson, J. W., Harvey, R. J., Illing, E. A., Kennedy, D. W., Klatt-Cromwell, C., Kuan, et al
2025; 86 (3): 243-244

- **Paxlovid Is Associated With Lower Rates of Long COVID-19 Smell and Taste Disorders.** *International forum of allergy & rhinology*
Wang, E., Patel, Z. M.
2025: e23612
- **The extra cost of biologics as first-line treatment in uncontrolled chronic rhinosinusitis with nasal polyps with no previous sinus surgery is overwhelming: a budget impact analysis.** *Rhinology*
Fieux, M., Margier, J., Bartier, S., Chang, M., Carsuzaa, F., Hwang, P. H., Patel, Z. M., Tringali, S., Favier, V., Savary, T.
2025
- **Office-based Sinus Surgery.** *Otolaryngologic clinics of North America*
Fieux, M., Patel, Z. M.
2025
- **Abridging the 22-Item Sino-Nasal Outcome Test (SNOT-22) in People With Cystic Fibrosis: Limiting Survey Burden.** *International forum of allergy & rhinology*
Chen, H., Fischer, J. L., Tibbe, T. D., Sedaghat, A. R., Han, E. J., Mace, J. C., Alt, J. A., Bodner, T. E., Chowdhury, N. I., Gao, Y. A., Hwang, P. H., Khanwalkar, A., Kimple, et al
2025: e23591
- **Expert Strategies: Skull Base Reconstruction-Global Perspectives, Insights, and Algorithms through a MixedMethods Approach.** *International forum of allergy & rhinology*
Kuan, E. C., Talati, V., Patel, J. A., Nguyen, T. V., Abiri, A., Pang, J. C., Goshtasbi, K., Liu, L., Craig, J. R., Papagiannopoulos, P., Phillips, K. M., Tajudeen, B. A., Adappa, et al
2025: e23596
- **Scoping review of deep learning research illuminates artificial intelligence chasm in otolaryngology-head and neck surgery.** *NPJ digital medicine*
Liu, G. S., Fereydooni, S., Lee, M. C., Polkampally, S., Huynh, J., Kuchibhotla, S., Shah, M. M., Ayoub, N. F., Capasso, R., Chang, M. T., Doyle, P. C., Holsinger, F. C., Patel, et al
2025; 8 (1): 265
- **The Development and Validation of the Smell-Qx Questionnaire, Based on a Systematic Review of the Literature and the COMET Initiative on the Development of Core Outcome Sets for Clinical Trials in Olfactory Disorders.** *International forum of allergy & rhinology*
Lechner, M., Fjaeldstad, A., Rehman, U., Liu, J., Boniface, D., Boardman, J., Boak, D., Altundag, A., Frasnelli, J., Gane, S., Holbrook, E., Hsieh, J., Huart, et al
2025: e23604
- **Olfaction, Eating Preference, and Quality of Life in Cystic Fibrosis Chronic Rhinosinusitis.** *The Laryngoscope*
Liu, C. M., Fischer, J. L., Lee, M. J., Mace, J. C., Kimple, A. J., Markarian, K., Alt, J. A., Bodner, T. E., Chowdhury, N. I., Chung, S. Y., Eshaghian, P. H., Gao, Y. A., Getz, et al
2025
- **June 4: International Skull Base Surgery Day.** *International forum of allergy & rhinology*
Gudis, D. A., Bleier, B. S., Eloy, J. A., Evans, J. J., Fernandez-Miranda, J. C., Gardner, P. A., Geltzeiler, M., Grayson, J. W., Harvey, R. J., Illing, E. A., Kennedy, D. W., Klatt-Cromwell, C., Kuan, et al
2025
- **Expert Consensus on Surgical Management of Primary Diffuse Type 2-Dominant Chronic Rhinosinusitis.** *International forum of allergy & rhinology*
Blauwblomme, M., Georgalas, C., Ahmed, S., Alobid, I., Battaglia, P., Castelnuovo, P., Constantinidis, J., Dallan, I., Eeckels, A. S., Ferrari, M., Gevaert, P., Grayson, J., Harvey, et al
2025
- **Smell Recovery After Platelet-Rich Plasma After Trauma-Induced Anosmia.** *JAMA otolaryngology-- head & neck surgery*
Wang, E., Patel, Z. M.
2025
- **Ipsilateral Nasoseptal Flaps in a Transpterygoid Approach: Technical Pearls and Reconstruction Outcomes.** *Journal of neurological surgery. Part B, Skull base*
Chang, M. T., Grimm, D., Asmaro, K., Yong, M., Low, C., Lee, C. K., Nayak, J. V., Hwang, P. H., Fernandez-Miranda, J. C., Patel, Z. M.
2025; 86 (1): 76-81

- **The Exhalation Delivery System with Fluticasone has Consistent Efficacy Across the Spectrum of Chronic Rhinosinusitis: Pooled Analysis of 4 Placebo-Controlled Trials**
White, D., Mahdavinia, M., Adappa, N., Chandra, R., Davis, G., Mahmoud, R., Messina, J., Palmer, J., Patel, Z., Peters, A., Schlosser, R., Sindwani, R., Soler, et al
MOSBY-ELSEVIER.2025: AB76
- **Durable reconstitution of sinonasal epithelium by transplant of CFTR gene corrected airway stem cells.** *bioRxiv : the preprint server for biology*
Bravo, D. T., Vaidyanathan, S., Baker, J., Sinha, V., Tsai, E., Roozdar, P., Kong, W. W., Atkinson, P. J., Patel, Z. M., Hwang, P. H., Rao, V. K., Negrin, R. S., Wine, et al
2025
- **Added Sinonasal Morbidity of Transpterygoid Approach versus Transsphenoidal Approach: A Case-Controlled Analysis** *JOURNAL OF NEUROLOGICAL SURGERY PART B-SKULL BASE*
Saroya, J., Huang, A. E., Hooseinzadeh, F., Lee, C. K., Fernandez-Miranda, J., Hwang, P. H., Patel, Z. M., Nayak, J. V., Chang, M. T.
2025
- **Unilateral Versus Bilateral Endoscopic Resection of Olfactory Neuroblastoma: Pooled Analysis From Prospective and Retrospective Multicenter Data.** *International forum of allergy & rhinology*
Abiri, A., Nguyen, T. V., Chen, H., Krippaehne, E., Lerner, D. K., Rahman, A. S., Roozdar, P., Rosvall, B. R., Sabbaj, M., Workman, A. D., Wu, S., Adappa, N. D., Beswick, et al
2025
- **Machine learning of endoscopy images to identify, classify, and segment sinonasal masses.** *International forum of allergy & rhinology*
Levi, L., Ye, K., Fieux, M., Renteria, A., Lin, S., Xing, L., Ayoub, N. F., Patel, Z. M., Nayak, J. V., Hwang, P. H., Chang, M. T.
2025
- **Comparing Efficacy of Steroid Irrigation + Steroid-eluting Sinus Stent Versus Steroid Irrigation Alone for Maintaining Frontal Sinus Patency After Sinus Surgery: A Randomized Controlled Trial.** *International forum of allergy & rhinology*
Fieux, M., Noel, J., Roozdar, P., Neves, C. A., Yan, C. H., Tyler, M., Rathor, A., Chang, M. T., Nayak, J. V., Hwang, P. H., Patel, Z. M.
2025
- **Utilization of ChatGPT for Rhinology Patient Education: Limitations in a Surgical Sub-Specialty.** *OTO open*
Huang, A. E., Chang, M. T., Khanwalkar, A., Yan, C. H., Phillips, K. M., Yong, M. J., Nayak, J. V., Hwang, P. H., Patel, Z. M.
2025; 9 (1): e70065
- **Correlation of the Sinonasal Outcome Test-22 With the University of Washington Quality of Life in Assessing Quality of Life in Sinonasal Malignancy Utilizing a Multicenter Prospective Observational Cohort Registry.** *International forum of allergy & rhinology*
Fleseriu, C. M., Wang, E. W., Beswick, D. M., Maoz, S. L., Hwang, P. H., Kuan, E. C., Adappa, N. D., Geltzeiler, M., Abuzeid, W. M., Pinheiro-Neto, C. D., Getz, A. E., Humphries, I. M., Le, et al
2025
- **Long-term Outcomes of PRP Injections for Post-viral Olfactory Loss: A Prospective Cohort Study.** *International forum of allergy & rhinology*
Fieux, M., Castro, B. R., Jang, S. S., Yan, C. H., Patel, Z. M.
2024
- **Evaluating the quality and readability of ChatGPT-generated patient-facing medical information in rhinology.** *European archives of oto-rhino-laryngology : official journal of the European Federation of Oto-Rhino-Laryngological Societies (EUFOS) : affiliated with the German Society for Oto-Rhino-Laryngology - Head and Neck Surgery*
Fazilat, A. Z., Brenac, C., Kawamoto-Duran, D., Berry, C. E., Alyono, J., Chang, M. T., Liu, D. T., Patel, Z. M., Tringali, S., Wan, D. C., Fieux, M.
2024
- **Posterior nasal nerve surgical neurectomy versus ablation for chronic rhinitis.** *American journal of otolaryngology*
Maddineni, S., Hwang, P. H., Patel, Z. M., Nayak, J. V., Chang, M. T.
2024; 46 (1): 104553
- **Pathologic dural invasion is associated with regional recurrence in olfactory neuroblastoma: A multi-institutional study.** *International forum of allergy & rhinology*
Tang, A., Taori, S., Fung, N., Almeida, J. P., Champagne, P. O., Fernandez-Miranda, J. C., Gardner, P., Hwang, P. H., Nayak, J. V., Patel, C., Patel, Z. M., Celda, M. P., Pinheiro-Neto, et al
2024

- **Using Indocyanine Green Fluorescence Angiography to Evaluate the Impact of Surgical and Patient Factors on Posterior Septal Artery Perfusion in Endoscopic Skull Base Surgery** *JOURNAL OF NEUROLOGICAL SURGERY PART B-SKULL BASE*
Daum, R., Grimm, D., Yong, M., Hosseinzadeh, F., Lee, C. K., Fernandez-Miranda, J. C., Nayak, J., Patel, Z. M., Hwang, P. H., Chang, M. T.
2024
- **Reduced Sense of Smell in Patients with Severe Chronic Rhinosinusitis and its Implications for Diagnosis and Management: A Narrative Review.** *Advances in therapy*
Soler, Z. M., Nash, S., Lane, A. P., Patel, Z. M., Lee, S. E., Fokkens, W. J., Corbett, M., Jacob-Nara, J. A., Sacks, H.
2024
- **Association Between Smell Loss, Disease Burden, and Dupilumab Efficacy in Chronic Rhinosinusitis with Nasal Polyps.** *American journal of rhinology & allergy*
Soler, Z. M., Patel, Z. M., Mullol, J., Mattos, J., Nash, S., Xia, C., Wang, Z., Borsos, K., Corbett, M., Jacob-Nara, J. A., Sacks, H., Rowe, P., Deniz, et al
2024: 19458924241274501
- **Comparative analysis of traditional machine learning and automated machine learning: advancing inverted papilloma versus associated squamous cell carcinoma diagnosis.** *International forum of allergy & rhinology*
Hosseinzadeh, F., Mohammadi, S. S., Palmer, J. N., Kohanski, M. A., Adappa, N. D., Chang, M. T., Hwang, P. H., Nayak, J. V., Patel, Z. M.
2024
- **EDS-FLU efficacy in patients with chronic rhinosinusitis with or without prior sinus surgery in ReOpen1 and ReOpen2 randomized controlled trials.** *International forum of allergy & rhinology*
Wise, S. K., Adappa, N. D., Chandra, R. K., Davis, G. E., Mahdavinia, M., Mahmoud, R., Messina, J., Palmer, J. N., Patel, Z. M., Peters, A. T., Schlosser, R. J., Sindwani, R., Soler, et al
2024
- **Impact of sociodemographic status and sex on chronic rhinosinusitis and olfaction in people with cystic fibrosis.** *International forum of allergy & rhinology*
Han, E. J., Liu, C. M., Fischer, J. L., Mace, J. C., Markarian, K., Alt, J. A., Bodner, T. E., Chowdhury, N. I., Eshaghian, P. H., Gao, Y. A., Getz, A. E., Hwang, P. H., Khanwalkar, et al
2024
- **Features of Importance in Nasal Endoscopy: Deriving a Meaningful Framework.** *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*
Babahaji, L. M., Ganeshan, V., Nguyen, T. S., Ahmed, O., Barton, B. M., Chandra, R., Chen, P. G., Gudis, D. A., Halawi, A., Higgins, T. S., Joe, S. A., Kuan, E. C., Marino, et al
2024
- **Utilization and efficacy of platelet-rich plasma and platelet-rich fibrin in otolaryngology: a systematic evidence-based review.** *European archives of oto-rhino-laryngology : official journal of the European Federation of Oto-Rhino-Laryngological Societies (EUFOS) : affiliated with the German Society for Oto-Rhino-Laryngology - Head and Neck Surgery*
Sharifi, A., Kouhi, A., Patel, Z. M.
2024
- **University of Washington Quality of Life subdomain outcomes after treatment of sinonasal malignancy: A prospective, multicenter study.** *International forum of allergy & rhinology*
Maoz, S. L., Golzar, A., Choby, G., Hwang, P. H., Wang, E. W., Kuan, E. C., Adappa, N. D., Geltzeiler, M., Getz, A. E., Humphreys, I. M., Le, C. H., Pinheiro-Neto, C. D., Fischer, et al
2024
- **The Utility of a "Second-Look" Debridement Following Endonasal Skull Base Surgery in the Pediatric Population.** *Journal of neurological surgery. Part B, Skull base*
Chang, M. T., Huang, A. E., Quon, J. L., Fernandez-Miranda, J. C., Wen, C. Z., Eide, J. G., Kshirsagar, R. S., Qian, Z. J., Nayak, J. V., Hwang, P. H., Adappa, N. D., Patel, Z. M.
2024; 85 (3): 313-317
- **Predictors of Sinonasal Improvement After Highly Effective Modulator Therapy in Adults with Cystic Fibrosis.** *The Laryngoscope*
Beswick, D. M., Liu, C. M., Overvest, J. B., Zemke, A., Khatiwada, A., Gudis, D. A., Miller, J. E., Kimple, A., Tervo, J. P., DiMango, E., Goralski, J. L., Keating, C., Senior, et al
2024

- **Can GPT-4 revolutionize otolaryngology? Navigating opportunities and ethical considerations.** *American journal of otolaryngology*
Edalati, S., Vasan, V., Cheng, C. P., Patel, Z., Govindaraj, S., Illoreta, A. M.
2024; 45 (4): 104303
- **Recurrence morbidity of olfactory neuroblastoma.** *International forum of allergy & rhinology*
Melder, K., Mace, J. C., Choby, G., Almeida, J. P., Champagne, P., Chan, E., Ciporen, J., Chaskes, M. B., Fernandez-Miranda, J., Fung, N. K., Gardner, P., Hwang, P., Ji, et al
2024
- **SNOT-22 subdomain outcomes following treatment for sinonasal malignancy: A prospective, multicenter study.** *International forum of allergy & rhinology*
Grimm, D. R., Beswick, D. M., Maoz, S. L., Wang, E. W., Choby, G. W., Kuan, E. C., Chan, E. P., Adappa, N. D., Geltzeiler, M., Getz, A. E., Humphreys, I. M., Le, C. H., Abuzeid, et al
2024
- **Patient perspectives on chronic rhinosinusitis in cystic fibrosis: Symptom prioritization in the era of highly effective modulator therapy.** *International forum of allergy & rhinology*
Liu, C. M., Han, E. J., Fischer, J. L., Mace, J. C., Mattos, J. L., Markarian, K., Alt, J. A., Bodner, T. E., Chowdhury, N. I., Eshaghian, P. H., Getz, A. E., Hwang, P. H., Khanwalkar, et al
2024
- **Impact of dupilumab prescribing on utilization of medical and surgical therapies for chronic rhinosinusitis with nasal polyps.** *International forum of allergy & rhinology*
Low, C. M., Wang, A. R., Yong, M., Nayak, J., Patel, Z., Hwang, P. H.
2024
- **Ipsilateral Nasoseptal Flaps in a Transpterygoid Approach: Technical Pearls and Reconstruction Outcomes** *JOURNAL OF NEUROLOGICAL SURGERY PART B-SKULL BASE*
Chang, M. T., Grimm, D., Asmaro, K., Yong, M., Low, C., Lee, C. K., Nayak, J. V., Hwang, P. H., Fernandez-Miranda, J. C., Patel, Z. M.
2024
- **Efficacy of EDS-FLU for Chronic Rhinosinusitis: Two Randomized Controlled Trials (ReOpen1 and ReOpen2).** *The journal of allergy and clinical immunology. In practice*
Palmer, J. N., Adappa, N. D., Chandra, R. K., Davis, G. E., Mahdavinia, M., Messina, J., Ow, R. A., Patel, Z. M., Peters, A. T., Sacks, H., Schlosser, R. J., Sindwani, R., Soler, et al
2024
- **Determining the minimal clinically important difference for the questionnaire of olfactory disorders in people with cystic fibrosis and factors associated with improvement after highly effective modulator therapy.** *International forum of allergy & rhinology*
Miller, J. E., Taylor-Cousar, J. L., Overdeest, J. B., Khatiwada, A., Mace, J. C., Alt, J. A., Bodner, T. E., Chowdhury, N. I., DiMango, E. A., Eshaghian, P. H., Getz, A. E., Gudis, D. A., Han, et al
2023
- **Surgical Correction of Nasal Obstruction and Its Effect on Eustachian Tube Dysfunction Symptoms.** *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*
Daum, R., Grimm, D., Castro Silva, B. R., Huang, A. E., Lee, J. Y., Nayak, J. V., Patel, Z. M., Hwang, P. H., Chang, M. T.
2023
- **Factors that predict pursuing sinus surgery in the era of highly effective modulator therapy.** *International forum of allergy & rhinology*
Beswick, D. M., Han, E. J., Mace, J. C., Markarian, K., Alt, J. A., Bodner, T. E., Chowdhury, N. I., Eshaghian, P. H., Getz, A. E., Hwang, P. H., Khanwalkar, A., Kimple, A. J., Lee, et al
2023
- **Eustachian tube dysfunction symptoms after endonasal skull base surgery.** *International forum of allergy & rhinology*
Grimm, D., Daum, R., Castro Silva, B. R., Lee, C. K., Fernandez-Miranda, J. C., Nayak, J. V., Patel, Z. M., Hwang, P. H., Chang, M. T.
2023
- **Olfactory System: Basic Anatomy and Physiology for General Otorhinolaryngologists.** *Clinical and experimental otorhinolaryngology*
Han, S. A., Kim, J. K., Cho, D., Patel, Z. M., Rhee, C.
2023

- **International consensus statement on allergy and rhinology: Sinonasal tumors.** *International forum of allergy & rhinology*
Kuan, E. C., Wang, E. W., Adappa, N. D., Beswick, D. M., London, N. R., Su, S. Y., Wang, M. B., Abuzeid, W. M., Alexiev, B., Alt, J. A., Antognoni, P., Alonso-Basanta, M., Batra, et al
2023
- **Predictive factors for decreased baseline quality of life in patients with sinonasal malignancies.** *International forum of allergy & rhinology*
Fleseriu, C. M., Beswick, D. M., Maoz, S. L., Hwang, P. H., Choby, G., Kuan, E. C., Chan, E. P., Adappa, N. D., Geltzeiler, M., Getz, A. E., Humphries, I. M., Le, C. H., Abuzeid, et al
2023
- **A Consistent Endoscopic Landmark to Identify the Anterior Ethmoidal Artery.** *The Laryngoscope*
Mundy, D. C., Yan, C. H., Tyler, M. A., Patel, Z. M.
2023
- **Multicenter Survival Analysis and Application of an Olfactory Neuroblastoma Staging Modification Incorporating Hyams Grade.** *JAMA otolaryngology-- head & neck surgery*
Choby, G., Geltzeiler, M., Almeida, J. P., Champagne, P. O., Chan, E., Ciporen, J., Chaskes, M. B., Fernandez-Miranda, J., Gardner, P., Hwang, P., Ji, K. S., Kalyvas, A., Kong, et al
2023
- **International Multicenter Study of Clinical Outcomes of Sinonasal Melanoma Shows Survival Benefit for Patients Treated with Immune Checkpoint Inhibitors and Potential Improvements to the Current TNM Staging System.** *Journal of neurological surgery. Part B, Skull base*
Lechner, M., Takahashi, Y., Turri-Zanoni, M., Ferrari, M., Liu, J., Counsell, N., Mattavelli, D., Rampinelli, V., Vermi, W., Lombardi, D., Saade, R., Park, K. W., Scharfing, et al
2023; 84 (4): 307-319
- **Incidence of hypocortisolism with long-term budesonide irrigations for chronic rhinosinusitis.** *International forum of allergy & rhinology*
Silva, B. R., Tyler, M. A., Ma, Y., Wang, J., Nayak, J. V., Patel, Z. M., Hwang, P. H.
2023
- **Long-term quality of life after treatment in sinonasal malignancy: A prospective, multi-center study.** *International forum of allergy & rhinology*
Maoz, S. L., Wang, E. W., Hwang, P. H., Choby, G., Kuan, E. C., Fleseriu, C. M., Chan, E. P., Adappa, N. D., Geltzeiler, M., Getz, A. E., Humphreys, I. M., Le, C. H., Abuzeid, et al
2023
- **Disparities in Access to Healthcare in Adults with Sinusitis in the United States.** *International forum of allergy & rhinology*
Shah, J. P., Youn, G. M., Wei, E. X., Patel, Z. M.
2023
- **The Utility of a "Second-Look" Debridement Following Endonasal Skull Base Surgery in the Pediatric Population** *JOURNAL OF NEUROLOGICAL SURGERY PART B-SKULL BASE*
Chang, M. T., Huang, A. E., Quon, J. L., Fernandez-Miranda, J. C., Wen, C. Z., Eide, J. G., Kshirsagar, R. S., Qian, Z., Nayak, J. V., Hwang, P. H., Adappa, N. D., Patel, Z. M.
2023
- **Nasal disease with polyps: need for clarity.** *International forum of allergy & rhinology*
Pezato, R., Stamm, A. C., Douglas, R., Han, J. K., Chen, P. G., Neto, C. D., Tepedino, M. S., Singh, N., Balsalobre, L., Ryu, C. H., Gregorio, L., Amatrafi, S., Felippu, et al
2023
- **Radiographic predictors of occult intracranial involvement in olfactory neuroblastoma patients.** *International forum of allergy & rhinology*
Geltzeiler, M., Choby, G. W., Ji, K. S., Mace, J. C., Almeida, J. P., de Almeida, J., Champagne, P., Chan, E., Ciporen, J. N., Chaskes, M. B., Cornell, S., Drozdowski, V., Fernandez-Miranda, et al
2023
- **Myalgic Encephalomyelitis/Chronic Fatigue Syndrome is common in post-acute sequelae of SARS-CoV-2 infection (PASC): Results from a post-COVID-19 multidisciplinary clinic.** *Frontiers in neurology*
Bonilla, H., Quach, T. C., Tiwari, A., Bonilla, A. E., Miglis, M., Yang, P. C., Eggert, L. E., Sharifi, H., Horomanski, A., Subramanian, A., Smirnov, L., Simpson, N., Halawi, et al
2023; 14: 1090747

- **Social Media Utilization in Otolaryngology: A Scoping Review.** *The Laryngoscope*
Huang, A. E., Chan, E. P., Stave, C. M., Patel, Z. M., Hwang, P. H., Chang, M. T.
2023
- **Tranexamic acid does not significantly lower postoperative bleeding after endoscopic sinus and nasal surgery.** *International forum of allergy & rhinology*
Khanwalkar, A., Chan, E., Roozdar, P., Kim, D., Ma, Y., Hwang, P. H., Nayak, J. V., Patel, Z. M.
2023
- **Avoiding bias in artificial intelligence.** *International forum of allergy & rhinology*
Gudis, D. A., McCoul, E. D., Marino, M. J., Patel, Z. M.
2022
- **Use of platelet-rich plasma for COVID-19 related olfactory loss, a randomized controlled trial.** *International forum of allergy & rhinology*
Yan, C. H., Jang, S. S., Lin, H. C., Ma, Y., Khanwalker, A. R., Thai, A., Patel, Z. M.
2022
- **High prevalence of persistent smell loss and qualitative smell dysfunction during the COVID-19 pandemic in the United States: urgent need for clinical trials.** *International forum of allergy & rhinology*
Lechner, M., Liu, J., Counsell, N., Yan, C. H., Paun, S., Eynon-Lewis, N., Sutton, L., Jayaraj, S., Batterham, R. L., Hopkins, C., Philpott, C., Lund, V. J., Hatter, et al
2022
- **Effect of dupilumab on Eustachian tube dysfunction in patients with chronic rhinosinusitis with nasal polyposis.** *International forum of allergy & rhinology*
Chang, M., Roozdar, P., Lin, Y. T., Lee, J. Y., Nayak, J. V., Patel, Z. M., Hwang, P. H.
2022
- **Novel Therapies in Olfactory Disorders** *CURRENT OTORHINOLARYNGOLOGY REPORTS*
Chang, M. T., Patel, Z. M.
2022: 1-6
- **The Omicron Variant of SARS-CoV-2 and its Effect on the Olfactory System.** *International forum of allergy & rhinology*
Dehgani-Mobaraki, P., Patel, Z., Zaidi, A. K., Giannandrea, D., Hopkins, C.
2022
- **International Multicenter Study of Clinical Outcomes of Sinonasal Melanoma Shows Survival Benefit for Patients Treated with Immune Checkpoint Inhibitors and Potential Improvements to the Current TNM Staging System** *JOURNAL OF NEUROLOGICAL SURGERY PART B-SKULL BASE*
Lechner, M., Takahashi, Y., Turri-Zanoni, M., Ferrari, M., Liu, J., Counsell, N., Mattavelli, D., Rampinelli, V., Vermi, W., Lombardi, D., Saade, R., Park, K., Schartinger, et al
2022
- **Prospective intraoperative and histologic evaluation of cavernous sinus medial wall invasion by pituitary adenomas and its implications for acromegaly remission outcomes.** *Scientific reports*
Mohyeldin, A., Katznelson, L. J., Hoffman, A. R., Asmaro, K., Ahmadian, S. S., Eltobgy, M. M., Nayak, J. V., Patel, Z. M., Hwang, P. H., Fernandez-Miranda, J. C.
2022; 12 (1): 9919
- **International consensus statement on allergy and rhinology: Olfaction.** *International forum of allergy & rhinology*
Patel, Z. M., Holbrook, E. H., Turner, J. H., Adappa, N. D., Albers, M. W., Altundag, A., Appenzeller, S., Costanzo, R. M., Croy, I., Davis, G. E., Dehgani-Mobaraki, P., Doty, R. L., Duffy, et al
2022; 12 (4): 327-680
- **Anatomic Considerations in Endoscopic Pituitary Surgery.** *Otolaryngologic clinics of North America*
Low, C. M., Vigo, V., Nunez, M., Fernandez-Miranda, J. C., Patel, Z. M.
2022
- **Association of Race, Ethnicity, and Socioeconomic Status With Esthesioneuroblastoma Presentation, Treatment, and Survival.** *OTO open*
Sharma, R. K., Irace, A. L., Overvest, J. B., Turner, J. H., Patel, Z. M., Gudis, D. A.
2022; 6 (1): 2473974X221075210

- **Deep learning classification of inverted papilloma malignant transformation using 3D convolutional neural networks and magnetic resonance imaging.** *International forum of allergy & rhinology*
Liu, G. S., Yang, A., Kim, D., Hojel, A., Voevodsky, D., Wang, J., Tong, C. C., Ungerer, H., Palmer, J. N., Kohanski, M. A., Nayak, J. V., Hwang, P. H., Adappa, et al
2022
- **Clinical outcomes, Kadish-INSICA staging and therapeutic targeting of somatostatin receptor 2 in olfactory neuroblastoma.** *European journal of cancer (Oxford, England : 1990)*
Lechner, M., Takahashi, Y., Turri-Zanoni, M., Liu, J., Counsell, N., Hermsen, M., Kaur, R. P., Zhao, T., Ramanathan, M. J., Schartinger, V. H., Emanuel, O., Helman, S., Varghese, et al
1800
- **Venous thromboembolism rates and risk factors following endoscopic skull base surgery.** *International forum of allergy & rhinology*
Chang, M. T., Jitaroon, K., Song, S., Roozdar, P., Wangworat, Y., Ibrahim, N., Ma, Y., Rao, V. K., Chang, S. D., Fernandez-Miranda, J. C., Patel, Z. M., Dodd, R. L., Hwang, et al
2021
- **Comparison of endoscopic sinus surgery timing in lung transplant patients with cystic fibrosis.** *International forum of allergy & rhinology*
Johnson, J. R., Hwang, P. H., Nayak, J. V., Patel, Z. M.
2021
- **Inflammatory molecular endotypes of nasal polyps derived from Caucasian and Japanese populations.** *The Journal of allergy and clinical immunology*
Nakayama, T., Lee, I. T., Le, W., Tsunemi, Y., Borchard, N. A., Zarabanda, D., Dholakia, S. S., Gall, P. A., Yang, A., Kim, D., Akutsu, M., Kashiwagi, T., Patel, et al
2021
- **The Effect of Povidone-Iodine Nasal Spray on COVID-19 Nasopharyngeal Viral Load in Patients: A Randomized Control Trial.** *The Laryngoscope*
Zarabanda, D., Vukkadala, N., Phillips, K. M., Qian, Z. J., Mfuh, K. O., Hatter, M., Lee, I. T., Rao, V. K., Hwang, P. H., Domb, G., Patel, Z. M., Pinsky, B. A., Nayak, et al
2021
- **Determinants of SARS-CoV-2 entry and replication in airway mucosal tissue and susceptibility in smokers.** *Cell reports. Medicine*
Nakayama, T., Lee, I. T., Jiang, S., Matter, M. S., Yan, C. H., Overdeest, J. B., Wu, C., Goltsev, Y., Shih, L., Liao, C., Zhu, B., Bai, Y., Lidsky, et al
2021: 100421
- **Emerging concepts in endoscopic skull base surgery training.** *International forum of allergy & rhinology*
Choby, G., Rabinowitz, M. R., Patel, Z. M., McKinney, K. A., Del Signore, A. G., Ebert, C. S., Thorp, B. D., Wang, E. W.
2021
- **Assessment of Opioid Use and Analgesic Requirements After Endoscopic Sinus Surgery: A Randomized Clinical Trial.** *JAMA otolaryngology-- head & neck surgery*
Ayoub, N. F., Choby, G., Turner, J. H., Abuzeid, W. M., Raviv, J. R., Thamboo, A., Ma, Y., Chandra, R. K., Chowdhury, N. I., Stokken, J. K., O'Brien, E. K., Shah, S., Akbar, et al
2021
- **Olfactory Loss and Olfactory Training.** *JAMA otolaryngology-- head & neck surgery*
Patel, Z. M.
2021
- **Surgical approach is associated with complication rate in sinonasal malignancy: A multicenter study.** *International forum of allergy & rhinology*
Beswick, D. M., Hwang, P. H., Adappa, N. D., Le, C. H., Humphreys DO, I. M., Getz, A. E., Suh, J. D., Aasen, D. M., Abuzeid, W. M., Chang, E. H., Kaizer, A. M., Kindgom, T. T., Kohanski, et al
2021
- **Oral Corticosteroids Following Endoscopic Sinus Surgery for Chronic Rhinosinusitis Without Nasal Polyposis: A Randomized Clinical Trial.** *JAMA otolaryngology-- head & neck surgery*
Chang, M. T., Noel, J. n., Ayoub, N. F., Qian, Z. J., Dholakia, S. n., Nayak, J. V., Patel, Z. M., Hwang, P. H.
2021

- **Corrigendum to: More Than Smell-COVID-19 Is Associated With Severe Impairment of Smell, Taste, and Chemesthesis.** *Chemical senses*
Parma, V., Ohla, K., Veldhuizen, M. G., Niv, M. Y., Kelly, C. E., Bakke, A. J., Cooper, K. W., Bouysset, C., Pirastu, N., Dibattista, M., Kaur, R., Liuzza, M. T., Pepino, et al
2021; 46
- **International Consensus Statement on Rhinology and Allergy: Rhinosinusitis.** *International forum of allergy & rhinology*
Orlandi, R. R., Kingdom, T. T., Smith, T. L., Bleier, B., DeConde, A., Luong, A., Poetker, D. M., Soler, Z., Welch, K. C., Wise, S. K., Adappa, N., Alt, J. A., Anselmo-Lima, et al
2020
- **Regarding Use of Topical Steroids in Patients With COVID-19-Associated Olfactory Loss.** *JAMA otolaryngology-- head & neck surgery*
Patel, Z. M.
2020
- **ACE2 localizes to the respiratory cilia and is not increased by ACE inhibitors or ARBs.** *Nature communications*
Lee, I. T., Nakayama, T., Wu, C., Goltsev, Y., Jiang, S., Gall, P. A., Liao, C., Shih, L., Schurch, C. M., McIlwain, D. R., Chu, P., Borchard, N. A., Zarabanda, et al
2020; 11 (1): 5453
- **Risk Factors for Rhinosinusitis After Endoscopic Transsphenoidal Adenectomy.** *American journal of rhinology & allergy*
Lee, C. H., Ikeda, A. K., Patel, S., Levy, J. M., Patel, Z. M., Arturo Solares, C., Oyesiku, N., Wise, S. K.
2020: 1945892420958549
- **Reply to: Correspondence - International Registry of Otolaryngologist - Head and Neck Surgeons with COVID-19.** *International forum of allergy & rhinology*
Sowerby, L. J., Patel, Z. M.
2020
- **Outcomes in Treatment of Rhinosinusitis in the Setting of Medication Induced Immunosuppression.** *American journal of rhinology & allergy*
Alapati, R., Nayak, J. V., Hwang, P. H., Patel, Z. M.
2020: 1945892420947932
- **In Reply: Precautions for Endoscopic Transnasal Skull Base Surgery During the COVID-19 Pandemic** *NEUROSURGERY*
Patel, Z. M., Fernandez-Miranda, J., Hwang, P. H., Nayak, J. V., Dodd, R. L., Sajjadi, H., Jackler, R. K.
2020; 87 (2): E162–E163
- **Sinus Headache: Differential Diagnosis and an Evidence-Based Approach.** *Otolaryngologic clinics of North America*
Kim, R., Patel, Z. M.
2020
- **More than smell - COVID-19 is associated with severe impairment of smell, taste, and chemesthesis.** *Chemical senses*
Parma, V., Ohla, K., Veldhuizen, M. G., Niv, M. Y., Kelly, C. E., Bakke, A. J., Cooper, K. W., Bouysset, C., Pirastu, N., Dibattista, M., Kaur, R., Liuzza, M. T., Pepino, et al
2020
- **In Response to COVID-19 and the Otolaryngologist: Preliminary Evidence-Based Review.** *The Laryngoscope*
Vukkadala, N., Rosenthal, E., Patel, Z. M.
2020
- **In Reply: Precautions for Endoscopic Transnasal Skull Base Surgery During the COVID-19 Pandemic.** *Neurosurgery*
Patel, Z. M., Fernandez-Miranda, J., Hwang, P. H., Nayak, J. V., Dodd, R. L., Sajjadi, H., Jackler, R. K.
2020
- **Letter: Precautions for Endoscopic Transnasal Skull Base Surgery During the COVID-19 Pandemic.** *Neurosurgery*
Patel, Z. M., Fernandez-Miranda, J., Hwang, P. H., Nayak, J. V., Dodd, R., Sajjadi, H., Jackler, R. K.
2020
- **A primer on viral-associated olfactory loss in the era of COVID-19.** *International forum of allergy & rhinology*
Soler, Z. M., Patel, Z. M., Turner, J. H., Holbrook, E. H.
2020

- **Evaluation of the Incidence of Other Cranial Neuropathies in Patients With Postviral Olfactory Loss.** *JAMA otolaryngology-- head & neck surgery*
Jitaroon, K., Wangworawut, Y., Ma, Y., Patel, Z. M.
2020
- **The use of platelet-rich plasma in treatment of olfactory dysfunction: A pilot study.** *Laryngoscope investigative otolaryngology*
Yan, C. H., Mundy, D. C., Patel, Z. M.
2020; 5 (2): 187-193
- **Indications and Outcomes for Patients With Limited Symptoms Undergoing Endoscopic Sinus Surgery.** *American journal of rhinology & allergy*
Rahman, A. S., Hwang, P. H., Alapati, R., Lin, Y., Nayak, J. V., Patel, Z. M., Yan, C. H.
2020: 1945892420912159
- **The use of platelet-rich plasma in treatment of olfactory dysfunction: A pilot study** *LARYNGOSCOPE INVESTIGATIVE OTOLARYNGOLOGY*
Yan, C. H., Mundy, D. C., Patel, Z. M.
2020
- **Effect of Omega-3 Supplementation in Patients With Smell Dysfunction Following Endoscopic Sellar and Parasellar Tumor Resection: A Multicenter Prospective Randomized Controlled Trial.** *Neurosurgery*
Yan, C. H., Rathor, A., Krook, K., Ma, Y., Rotella, M. R., Dodd, R. L., Hwang, P. H., Nayak, J. V., Oyesiku, N. M., DelGaudio, J. M., Levy, J. M., Wise, J., Wise, et al
2020
- **Hemodynamic changes in patients undergoing office-based sinus procedures under local anesthesia.** *International forum of allergy & rhinology*
Chang, M. T., Jitaroon, K. n., Nguyen, T. n., Yan, C. H., Overdevest, J. B., Nayak, J. V., Hwang, P. H., Patel, Z. M.
2020; 10 (1): 114–20
- **The Effect of Endoscopic Sinus Surgery on Eustachian Tube Dysfunction Symptoms.** *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*
Chang, M. T., Hosseini, D. K., Song, S. H., Nayak, J. V., Patel, Z. M., Lee, J. Y., Hwang, P. H.
2020: 194599820917396
- **Endoscopic Endonasal Approach for Resection of Suprasellar Hemangioblastoma: Selective Pituitary Sacrifice and Use of Indocyanine Dye: 2-Dimensional Operative Video.** *Operative neurosurgery (Hagerstown, Md.)*
Abhinav, K. n., Gimenez, P. n., Tyler, M. n., Patel, Z. M., Fernandez-Miranda, J. C.
2020
- **Robust ACE2 protein expression localizes to the motile cilia of the respiratory tract epithelia and is not increased by ACE inhibitors or angiotensin receptor blockers.** *medRxiv : the preprint server for health sciences*
Lee, I. T., Nakayama, T. n., Wu, C. T., Goltsev, Y. n., Jiang, S. n., Gall, P. A., Liao, C. K., Shih, L. C., Schürch, C. M., Mcllwain, D. R., Chu, P. n., Borchard, N. A., Zarabanda, et al
2020
- **Reflections and new developments within the COVID-19 pandemic.** *International forum of allergy & rhinology*
Patel, Z. M.
2020; 10 (5): 587–88
- **Rising to the Challenge: Otolaryngologists in the COVID-19 Pandemic.** *Otolaryngologic clinics of North America*
Patel, Z. M.
2020; 53 (6): xxvii-xxviii
- **COVID-19 and the otolaryngologist - preliminary evidence-based review.** *The Laryngoscope*
Vukkadala, N. n., Qian, Z. J., Holsinger, F. C., Patel, Z. M., Rosenthal, E. n.
2020
- **Olfactory Loss of Function as a Possible Symptom of COVID-19.** *JAMA otolaryngology-- head & neck surgery*
Lechner, M. n., Patel, Z. M., Philpott, C. n., Lund, V. J.
2020

- **International Registry of Otolaryngologist - Head and Neck Surgeons with COVID-19.** *International forum of allergy & rhinology*
Sowerby, L. J., Stephenson, K. n., Dickie, A. n., Lella, F. A., Jefferson, N. n., North, H. n., De Siasi, R. D., Maunsell, R. n., Herzog, M. n., Nandhan, R. n., Trozzi, M. n., Dehgani-Mobaraki, P. n., Melkane, et al
2020
- **Update on long-term outcomes for chronic rhinosinusitis in cystic fibrosis.** *Current opinion in otolaryngology & head and neck surgery*
Chang, M. T., Patel, Z. M.
2019
- **Correlation between extent of sinus surgery, radiographic disease, and postoperative outcomes.** *Rhinology*
Ayoub, N., Walgama, E., Thamboo, A., Chitsuthipakorn, W., Patel, Z. M., Nayak, J. V., Hwang, P. H.
2019
- **Follow-up Management of Patients After Transsphenoidal Approach for Resection of Pituitary Adenomas.** *American journal of rhinology & allergy*
Ikeda, A. K., Luk, L. J., Patel, Z. M., Oyesiku, N. M., Solares, C. A., DelGaudio, J. M., Levy, J. M., Wise, S. K.
2019: 1945892419879806
- **Chronic Electrical Stimulation for Tear Secretion: Lacrimal vs. anterior ethmoid nerve.** *The ocular surface*
Kossler, A. L., Brinton, M., Patel, Z. M., Dalal, R., Ta, C. N., Palanker, D.
2019
- **Rates of symptomatology are lower in recurrent sinonasal malignancy than in other recurrent cancers of the head and neck: a multi-institutional study**
Workman, A. D., Velasquez, N., Khan, N. I., Borchard, N. A., Kuan, E. C., Palmer, J. N., Wang, E. W., Patel, Z. M., Adappa, N. D.
WILEY.2019: 688–94
- **Imaging predictors for malignant transformation of inverted papilloma**
Yan, C. H., Tong, C. C. L., Penta, M., Patel, V. S., Palmer, J. N., Adappa, N. D., Nayak, J. V., Hwang, P. H., Patel, Z. M.
WILEY.2019: 777–82
- **The Horizon Sign and Frontal Bar: Two Topographic Landmarks to Confirm Endoscopic Frontal Sinusotomy** *OTOLARYNGOLOGY-HEAD AND NECK SURGERY*
Walgama, E. S., Thamboo, A., Tangbumrungham, N., Ayoub, N., Patel, Z. M., Nayak, J. V.
2019; 160 (4): 740–43
- **Rates of symptomatology are lower in recurrent sinonasal malignancy than in other recurrent cancers of the head and neck: a multi-institutional study.** *International forum of allergy & rhinology*
Workman, A. D., Velasquez, N., Khan, N. I., Borchard, N. A., Kuan, E. C., Palmer, J. N., Wang, E. W., Patel, Z. M., Adappa, N. D.
2019
- **Therapeutic use of steroids in non-chronic rhinosinusitis olfactory dysfunction: a systematic evidence-based review with recommendations**
Yan, C. H., Overvest, J. B., Patel, Z. M.
WILEY.2019: 165–76
- **Oncologic management of sinonasal undifferentiated carcinoma** *CURRENT OPINION IN OTOLARYNGOLOGY & HEAD AND NECK SURGERY*
Tyler, M. A., Holmes, B., Patel, Z. M.
2019; 27 (1): 59–66
- **The Horizon Sign and Frontal Bar: Two Topographic Landmarks to Confirm Endoscopic Frontal Sinusotomy.** *Otolaryngology--head and neck surgery : official journal of American Academy of Otolaryngology-Head and Neck Surgery*
Walgama, E. S., Thamboo, A., Tangbumrungham, N., Ayoub, N., Patel, Z. M., Nayak, J. V.
2019: 194599818825472
- **Arterial Pseudoaneurysm following Radiotherapy in Patients with a History of Nasopharyngeal Carcinoma.** *OTO open*
Choby, G., Tangbumrungham, N., Dodd, R., Patel, Z. M.
2019; 3 (1): 2473974X18823002

- **The effect of topical epinephrine 1:1000 with and without infiltration of 1% lidocaine with epinephrine 1:100,000 on endoscopic surgical field visualization: a double-blind randomized controlled study.** *International forum of allergy & rhinology*
Tangbumrungham, N. n., Hwang, P. H., Maul, X. n., Borchard, N. A., Dholakia, S. S., Patel, Z. M., Nayak, J. V., Choby, G. n.
2019
- **High-Efficiency, Selection-free Gene Repair in Airway Stem Cells from Cystic Fibrosis Patients Rescues CFTR Function in Differentiated Epithelia.** *Cell stem cell*
Vaidyanathan, S. n., Salahudeen, A. A., Sellers, Z. M., Bravo, D. T., Choi, S. S., Batish, A. n., Le, W. n., Baik, R. n., de la O, S. n., Kaushik, M. P., Galper, N. n., Lee, C. M., Teran, et al
2019
- **Transnasal endoscopic approach for pediatric skull base lesions: a case series.** *Journal of neurosurgery. Pediatrics*
Quon, J. L., Kim, L. H., Hwang, P. H., Patel, Z. M., Grant, G. A., Cheshier, S. H., Edwards, M. S.
2019: 1–12
- **Imaging predictors for malignant transformation of inverted papilloma.** *The Laryngoscope*
Yan, C. H., Tong, C. C., Penta, M., Patel, V. S., Palmer, J. N., Adappa, N. D., Nayak, J. V., Hwang, P. H., Patel, Z. M.
2018
- **Transoral Endoscopic Resection of High Cervical Osteophytes with Long- Term Symptom Resolution: Case Series, Imaging, and Literature Review** *WORLD NEUROSURGERY*
Jabarkheel, R., Chen, Y., Xu, L., Yan, C. H., Patel, Z. M., Desai, A. M.
2018; 120: 240–43
- **Precision medicine: why surgeons deviate from "appropriateness criteria" in the management of chronic rhinosinusitis and effects on outcomes**
Thamboo, A., Rathor, A., Borchard, N. A., Nayak, J. V., Hwang, P. H., Patel, Z. M.
WILEY.2018: 1389–94
- **Therapeutic use of steroids in non-chronic rhinosinusitis olfactory dysfunction: a systematic evidence-based review with recommendations.** *International forum of allergy & rhinology*
Yan, C. H., Overvest, J. B., Patel, Z. M.
2018
- **Oncologic management of sinonasal undifferentiated carcinoma.** *Current opinion in otolaryngology & head and neck surgery*
Tyler, M. A., Holmes, B., Patel, Z. M.
2018
- **Porcine small intestine submucosal grafts improve remucosalization and progenitor cell recruitment to sites of upper airway tissue remodeling** *INTERNATIONAL FORUM OF ALLERGY & RHINOLOGY*
Nayak, J. V., Rathor, A., Grayson, J. W., Bravo, D. T., Velasquez, N., Noel, J., Beswick, D. M., Riley, K. O., Patel, Z. M., Cho, D., Dodd, R. L., Thamboo, A., Choby, et al
2018; 8 (10): 1162–68
- **Trans-Oral Endoscopic Resection of High Cervical Osteophytes with Long-term Symptom Resolution: Case Series, Imaging, and Literature Review.** *World neurosurgery*
Jabarkheel, R., Chen, Y., Xu, L., Yan, C. H., Patel, Z. M., Desai, A. M.
2018
- **Comparison of outcomes following culture-directed vs non-culture-directed antibiotics in treatment of acute exacerbations of chronic rhinosinusitis**
Yan, C. H., Tangbumrungham, N., Maul, X. A., Ma, Y., Nayak, J. V., Hwang, P. H., Patel, Z. M.
WILEY.2018: 1028–33
- **Budesonide irrigation with olfactory training improves outcomes compared with olfactory training alone in patients with olfactory loss**
Nguyen, T. P., Patel, Z. M.
WILEY.2018: 977–81
- **Precision medicine: why surgeons deviate from "appropriateness criteria" in the management of chronic rhinosinusitis and effects on outcomes.** *International forum of allergy & rhinology*
Thamboo, A., Rathor, A., Borchard, N. A., Nayak, J. V., Hwang, P. H., Patel, Z. M.

2018

- **Computed tomography analysis of frontal cell prevalence according to the International Frontal Sinus Anatomy Classification** *INTERNATIONAL FORUM OF ALLERGY & RHINOLOGY*
Choby, G., Thamboo, A., Won, T., Kim, J., Shih, L., Hwang, P. H.
2018; 8 (7): 825–30
- **Budesonide irrigation with olfactory training improves outcomes compared with olfactory training alone in patients with olfactory loss.** *International forum of allergy & rhinology*
Nguyen, T. P., Patel, Z. M.
2018
- **Porcine small intestine submucosal grafts improve remucosalization and progenitor cell recruitment to sites of upper airway tissue remodeling.** *International forum of allergy & rhinology*
Nayak, J. V., Rathor, A., Grayson, J. W., Bravo, D. T., Velasquez, N., Noel, J., Beswick, D. M., Riley, K. O., Patel, Z. M., Cho, D., Dodd, R. L., Thamboo, A., Choby, et al
2018
- **Nose blowing after endoscopic sinus surgery does not adversely affect outcomes** *LARYNGOSCOPE*
Ayoub, N., Chitsuthipakorn, W., Nayak, J. V., Patel, Z. M., Hwang, P. H.
2018; 128 (6): 1268–73
- **Comparison of outcomes following culture-directed vs non-culture-directed antibiotics in treatment of acute exacerbations of chronic rhinosinusitis.** *International forum of allergy & rhinology*
Yan, C. H., Tangbumrungham, N., Maul, X. A., Ma, Y., Nayak, J. V., Hwang, P. H., Patel, Z. M.
2018
- **Risk Stratification for Postoperative Venous Thromboembolism after Endoscopic Sinus Surgery** *OTOLARYNGOLOGY-HEAD AND NECK SURGERY*
Beswick, D. M., Vaezeafshar, R., Ma, Y., Hwang, P. H., Nayak, J. V., Patel, Z. M.
2018; 158 (4): 767–73
- **Outcomes After Endoscopic Endonasal Resection of Craniopharyngiomas in the Pediatric Population** *WORLD NEUROSURGERY*
Patel, V. S., Thamboo, A., Quon, J., Nayak, J. V., Hwang, P. H., Edwards, M., Patel, Z. M.
2017; 108: 6–14
- **Outcomes After Endoscopic Endonasal Resection of Craniopharyngiomas in the Pediatric Population.** *World neurosurgery*
Patel, V. S., Thamboo, A., Quon, J., Nayak, J. V., Hwang, P. H., Edwards, M., Patel, Z. M.
2017; 108: 6-14
- **Evidence for altered levels of IgD in the nasal airway mucosa of patients with chronic rhinosinusitis** *JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY*
Min, J., Nayak, J. V., Hulse, K. E., Stevens, W. W., Raju, P. A., Huang, J. H., Suh, L. A., Van Roey, G. A., Norton, J. E., Carter, R. G., Price, C. P. E., Weibman, A. R., Rashan, et al
2017; 140 (6): 1562-+
- **Enhanced natural tearing by electrical stimulation of the anterior ethmoid nerve**
Brinton, M., Kossler, A., Patel, Z., Loudin, J., Franke, M., Ta, C., Palanker, D. V.
ASSOC RESEARCH VISION OPHTHALMOLOGY INC.2017
- **Enhanced Tearing by Electrical Stimulation of the Anterior Ethmoid Nerve** *INVESTIGATIVE OPHTHALMOLOGY & VISUAL SCIENCE*
Brinton, M., Kossler, A. L., Patel, Z. M., Loudin, J., Franke, M., Ta, C. N., Palanker, D.
2017; 58 (4): 2341-2348
- **Randomized Controlled Trial Demonstrating Cost-Effective Method of Olfactory Training in Clinical Practice: Essential Oils at Uncontrolled Concentration.** *Laryngoscope investigative otolaryngology*
Patel, Z. M., Wise, S. K., DelGaudio, J. M.
2017; 2 (2): 53-56
- **Surgical therapy vs continued medical therapy for medically refractory chronic rhinosinusitis: a systematic review and meta-analysis.** *International forum of allergy & rhinology*
Patel, Z. M., Thamboo, A., Rudmik, L., Nayak, J. V., Smith, T. L., Hwang, P. H.

2017; 7 (2): 119-127

- **Office Procedures in Refractory Chronic Rhinosinusitis** *OTOLARYNGOLOGIC CLINICS OF NORTH AMERICA*
Thamboo, A., Patel, Z. M.
2017; 50 (1): 113-?
- **The evidence for olfactory training in treating patients with olfactory loss** *CURRENT OPINION IN OTOLARYNGOLOGY & HEAD AND NECK SURGERY*
Patel, Z. M.
2017; 25 (1): 43-46
- **Successful repair of intraoperative cerebrospinal fluid leaks improves outcomes in endoscopic skull base surgery** *INTERNATIONAL FORUM OF ALLERGY & RHINOLOGY*
Shahangian, A., Soler, Z. M., Baker, A., Wise, S. K., Rereddy, S. K., Patel, Z. M., Oyesiku, N. M., DelGaudio, J. M., Hadjipanayis, C. G., Woodworth, B. A., Riley, K. O., Lee, J., Cusimano, et al
2017; 7 (1): 80-86
- **Nose blowing after endoscopic sinus surgery does not adversely affect outcomes.** *The Laryngoscope*
Ayoub, N. n., Chitsuthipakorn, W. n., Nayak, J. V., Patel, Z. M., Hwang, P. H.
2017
- **Barosinusitis: Comprehensive review and proposed new classification system.** *Allergy & rhinology (Providence, R.I.)*
Vaezeafshar, R. n., Psaltis, A. J., Rao, V. K., Zarabanda, D. n., Patel, Z. M., Nayak, J. V.
2017; 8 (3): 109-17
- **Equivalence in outcomes between Draf 2B vs Draf 3 frontal sinusotomy for refractory chronic frontal rhinosinusitis.** *International forum of allergy & rhinology*
Patel, V. S., Choby, G. n., Shih, L. C., Patel, Z. M., Nayak, J. V., Hwang, P. H.
2017
- **Variables associated with olfactory disorders in adults: A U.S. population-based analysis.** *World journal of otorhinolaryngology - head and neck surgery*
Noel, J. n., Habib, A. R., Thamboo, A. n., Patel, Z. M.
2017; 3 (1): 9-16
- **The prevalence of Eustachian tube dysfunction symptoms in patients with chronic rhinosinusitis.** *International forum of allergy & rhinology*
Tangbumrungham, N. n., Patel, V. S., Thamboo, A. n., Patel, Z. M., Nayak, J. V., Ma, Y. n., Choby, G. n., Hwang, P. H.
2017
- **Randomized Controlled Trial Demonstrating Cost-Effective Method of Olfactory Training in Clinical Practice** *Laryngoscope Investigative Otolaryngology*
Patel, Z. M., Wise, S. K., DelGaudio, J. M.
2017: 53-56
- **Factors impacting cerebrospinal fluid leak rates in endoscopic sellar surgery.** *International forum of allergy & rhinology*
Karnezis, T. T., Baker, A. B., Soler, Z. M., Wise, S. K., Rereddy, S. K., Patel, Z. M., Oyesiku, N. M., DelGaudio, J. M., Hadjipanayis, C. G., Woodworth, B. A., Riley, K. O., Lee, J., Cusimano, et al
2016; 6 (11): 1117-1125
- **Determinants of racial differences in survival for sinonasal cancer.** *Laryngoscope*
Patel, Z. M., Li, J., Chen, A. Y., Ward, K. C.
2016; 126 (9): 2022-2028
- **Immunotherapy compliance: comparison of subcutaneous versus sublingual immunotherapy** *INTERNATIONAL FORUM OF ALLERGY & RHINOLOGY*
Leader, B. A., Rotella, M., Stillman, L., DelGaudio, J. M., Patel, Z. M., Wise, S. K.
2016; 6 (5): 460-464
- **Olfaction following endoscopic skull base surgery** *CURRENT OPINION IN OTOLARYNGOLOGY & HEAD AND NECK SURGERY*
Patel, Z. M., DelGaudio, J. M.
2016; 24 (1): 70-74

- **Olfaction following endoscopic skull base surgery.** *Current opinion in otolaryngology & head and neck surgery*
Patel, Z. M., DelGaudio, J. M.
2016; 24 (1): 70-4
- **Multi-institutional study of risk factors for perioperative morbidity following transnasal endoscopic pituitary adenoma surgery** *INTERNATIONAL FORUM OF ALLERGY & RHINOLOGY*
Boling, C. C., Karnezis, T. T., Baker, A. B., Lawrence, L. A., Soler, Z. M., Vandergrift, W. A., Wise, S. K., DelGaudio, J. M., Patel, Z. M., Rereddy, S. K., Lee, J. M., Khan, M. N., Govindaraj, et al
2016; 6 (1): 101-107
- **Management of non-invasive rhinosinusitis in the immunosuppressed patient population** *LARYNGOSCOPE*
Dao, A. M., Rereddy, S. K., Wise, S. K., DelGaudio, J. M., Patel, Z. M.
2015; 125 (8): 1767-1771
- **Magnetic resonance cisternogram with intrathecal gadolinium with delayed imaging for difficult to diagnose cerebrospinal fluid leaks of anterior skull base** *INTERNATIONAL FORUM OF ALLERGY & RHINOLOGY*
DelGaudio, J. M., Bagnon, K. L., Wise, S. K., Patel, Z. M., Aiken, A. H., Hudgins, P. A.
2015; 5 (4): 333-338
- **Clinical Practice Guideline (Update): Adult Sinusitis** *OTOLARYNGOLOGY-HEAD AND NECK SURGERY*
Rosenfeld, R. M., Piccirillo, J. F., Chandrasekhar, S. S., Brook, I., Kumar, K. A., Kramper, M., Orlandi, R. R., Palmer, J. N., Patel, Z. M., Peters, A., Walsh, S. A., Corrigan, M. D.
2015; 152: S1-S39
- **Clinical Practice Guideline (Update): Adult Sinusitis Executive Summary** *OTOLARYNGOLOGY-HEAD AND NECK SURGERY*
Rosenfeld, R. M., Piccirillo, J. F., Chandrasekhar, S. S., Brook, I., Kumar, K. A., Kramper, M., Orlandi, R. R., Palmer, J. N., Patel, Z. M., Peters, A., Walsh, S. A., Corrigan, M. D.
2015; 152 (4): 598-609
- **Association of Decreased Rate of Influenza Vaccination With Increased Subjective Olfactory Dysfunction** *JAMA OTOLARYNGOLOGY-HEAD & NECK SURGERY*
Flanagan, C. E., Wise, S. K., DelGaudio, J. M., Patel, Z. M.
2015; 141 (3): 225-228
- **Higher Body Mass Index Is Associated with Subjective Olfactory Dysfunction** *BEHAVIOURAL NEUROLOGY*
Patel, Z. M., DelGaudio, J. M., Wise, S. K.
2015
- **Multi-institutional study of risk factors for perioperative morbidity following transnasal endoscopic pituitary adenoma surgery.** *International Forum of Allergy and Rhinology*
Boling, C.
2015
- **Endoscopic transsphenoidal pituitary surgery: transsphenoidal approach to the sella and sellar closure with septal flap: 3-dimensional operative video.** *Neurosurgery*
Chu, J., Wise, S. K., Patel, Z. M., Oyesiku, N. M.
2014; 10: 654-?
- **The nasal floor pedicled flap: a novel technique for use in skull base reconstruction** *INTERNATIONAL FORUM OF ALLERGY & RHINOLOGY*
Daraei, P., Oyesiku, N. M., Patel, Z. M.
2014; 4 (11): 937-943
- **Evaluation and Management of "Sinus Headache" in the Otolaryngology Practice** *OTOLARYNGOLOGIC CLINICS OF NORTH AMERICA*
Patel, Z. M., Setzen, M., Poetker, D. M., DelGaudio, J. M.
2014; 47 (2): 269-?
- **Improvement in the Detection of Locoregional Recurrence in Head and Neck Malignancies: F-18 Fluorodeoxyglucose-Positron Emission Tomography/Computed Tomography Compared to High-Resolution Contrast-Enhanced Computed Tomography and Endoscopic Examination** *LARYNGOSCOPE*
Rangaswamy, B., Fardanesh, M., Genden, E. M., Park, E. E., Fatterpekar, G., Patel, Z., Kim, J., Som, P. M., Kostakoglu, L.
2013; 123 (11): 2664-2669

- **Practice patterns regarding noninvasive rhinosinusitis in the immunosuppressed patient population.** *Allergy & rhinology (Providence, R.I.)*
Patel, Z. M.
2013; 4 (3): e151-4
- **Comparing use of the Sonopet((R)) ultrasonic bone aspirator to traditional instrumentation during the endoscopic transsphenoidal approach in pituitary tumor resection** *INTERNATIONAL FORUM OF ALLERGY & RHINOLOGY*
Baddour, H. M., Lupa, M. D., Patel, Z. M.
2013; 3 (7): 588-591
- **Concurrent functional endoscopic sinus surgery and septorhinoplasty: using evidence to make clinical decisions** *INTERNATIONAL FORUM OF ALLERGY & RHINOLOGY*
Patel, Z. M., Setzen, M., Sclafani, A. P., Del Gaudio, J. M.
2013; 3 (6): 488-492
- **"Sinus headache": rhinogenic headache or migraine? An evidence-based guide to diagnosis and treatment** *INTERNATIONAL FORUM OF ALLERGY & RHINOLOGY*
Patel, Z. M., Kennedy, D. W., Setzen, M., Poetker, D. M., DelGaudio, J. M.
2013; 3 (3): 221-230
- **Low-frequency pulsed ultrasound in the nasal cavity and paranasal sinuses: a feasibility and distribution study** *INTERNATIONAL FORUM OF ALLERGY & RHINOLOGY*
Patel, Z. M., Hwang, P. H., Chernomorsky, A., Bravo, D. T., Nguyen, B. L., Nesterova, K., Nayak, J. V.
2012; 2 (4): 303-308
- **The Prevention and Management of Complications in Ethmoid Sinus Surgery** *OTOLARYNGOLOGIC CLINICS OF NORTH AMERICA*
Patel, Z. M., Govindaraj, S.
2010; 43 (4): 855-?
- **The evolution of management for inverted papilloma: An analysis of 200 cases** *OTOLARYNGOLOGY-HEAD AND NECK SURGERY*
Lawson, W., Patel, Z. M.
2009; 140 (3): 330-335
- **The Development and Pathologic Processes that Influence Maxillary Sinus Pneumatization** *ANATOMICAL RECORD-ADVANCES IN INTEGRATIVE ANATOMY AND EVOLUTIONARY BIOLOGY*
Lawson, W., Patel, Z. M., Lin, F. Y.
2008; 291 (11): 1554-1563
- **The utility of concurrent rhinoplasty and sinus surgery - A 2-team approach** *ARCHIVES OF FACIAL PLASTIC SURGERY*
Marcus, B., Patel, Z., Busquets, J., Hwang, P. H., Cook, T. A.
2006; 8 (4): 260-262