



Zara Patel, MD

Professor of Otolaryngology - Head & Neck Surgery (OHNS)
Otolaryngology (Head and Neck Surgery)

CLINICAL OFFICE (PRIMARY)

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

801 Welch Rd

MC 5739

Stanford, CA 94305

Tel (650) 723-5651

Fax (650) 725-8502

Bio

BIO

Dr. Zara M. Patel is Director of Endoscopic Skull Base Surgery 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 was recruited to join the Emory University faculty in Atlanta in 2011. After four years, the rhinology division recruited her 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, is current 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 devices and techniques for endoscopic skull base surgery, 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)
- Member, Bio-X
- Member, Wu Tsai Neurosciences Institute

ADMINISTRATIVE APPOINTMENTS

- Director of Endoscopic Skull Base Surgery, Department of Otolaryngology - Head and Neck Surgery, (2017- present)
- Director Neurosinology - Advanced Sinus and Skull Base Surgery Fellowship, Department of Otolaryngology-Head and Neck Surgery, Stanford University, (2015- present)

HONORS AND AWARDS

- 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 - present)
- 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

LINKS

- Get a Second Opinion: <https://stanfordhealthcare.org/second-opinion/overview.html>
- Donate to support Dr. Patel's Research (Please specify Dr. Zara Patel on form): <https://med.stanford.edu/ohns/contact/gift.html>

Publications

PUBLICATIONS

- **Predictors of Sinonasal Improvement After Highly Effective Modulator Therapy in Adults with Cystic Fibrosis.** *The Laryngoscope*
Beswick, D. M., Liu, C. M., Overdevest, 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., Vasani, V., Cheng, C. P., Patel, Z., Govindaraj, S., Ilorreta, 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., Overdevest, 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., Scharfetter, 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., Khanwalkar, 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., Scharfetter, 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., Overdevest, 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., Scharfetter, 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., Overvest, 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., Overvest, 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., McIlwain, 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 Siati, 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. 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., Overdevest, 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., Overdevest, 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., Tangbumrungtham, 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., Tangbumrungtham, 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. E., Weibman, A. R., Rshan, 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.)*
Vaezaefshar, 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., Rerreddy, 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., Rerreddy, 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., Baugnon, 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