



Mount
Sinai

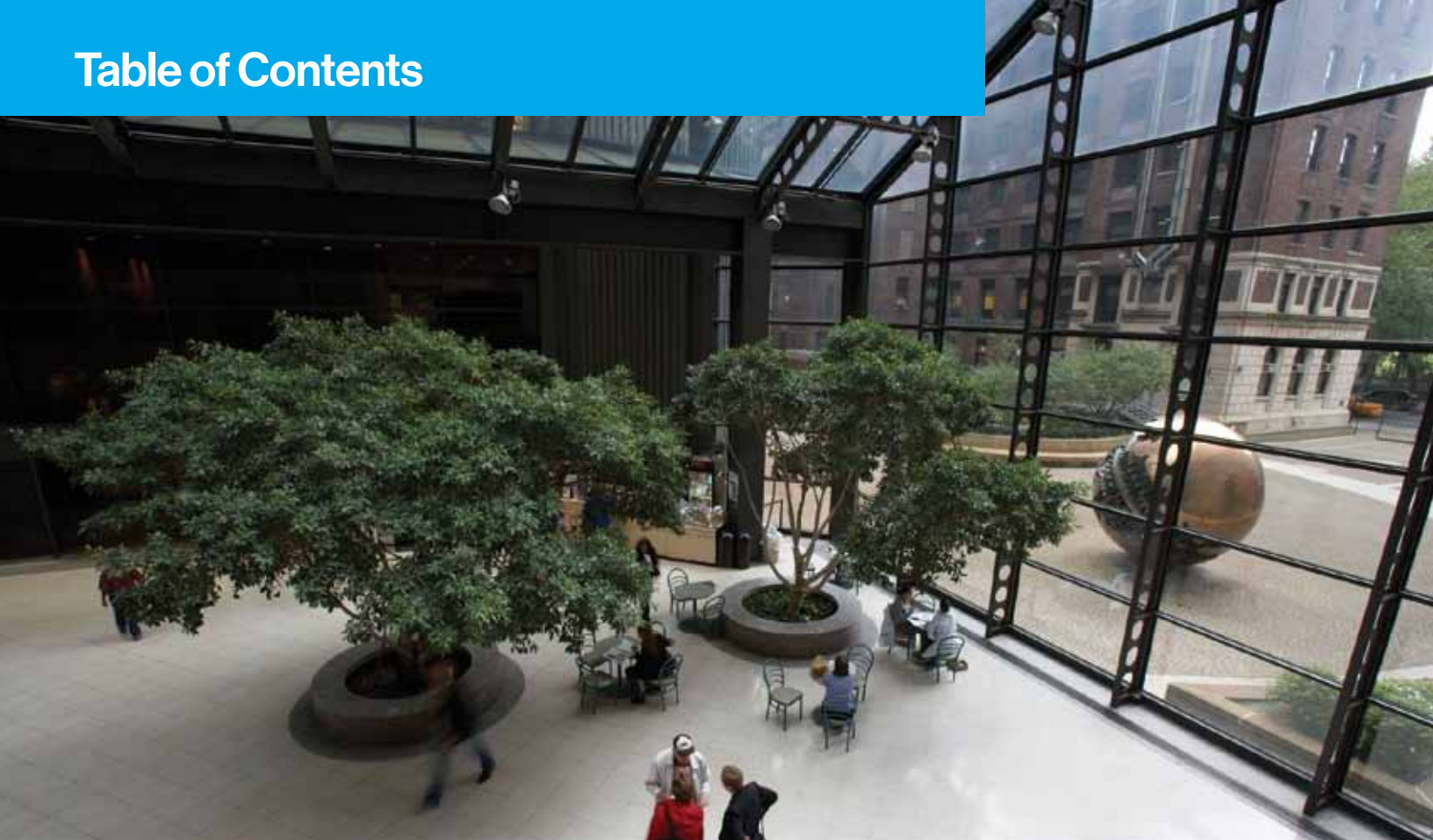
Outcomes and
Performance
2017

Otolaryngology – Head and Neck Surgery

Mount Sinai Health System



Table of Contents



1 Message from the Dean

1 Message from the Chair

2 Outcomes and Performances

2 Patient Hospital Experience

2 Patient Practice Experience

3 Head and Neck Institute/Head and Neck Oncology

6 Facial Plastic and Reconstructive Surgery

8 Laryngology

10 Oral and Maxillofacial Surgery

11 Otology and Neurotology

13 Pediatric Otolaryngology

14 Rhinology and Skull Base Surgery

16 Sleep Surgery

18 Vascular Birthmarks and Malformations

20 Faculty and Contact Information

BC Practice Locations

Message from the Dean



Mount Sinai's Department of Otolaryngology - Head and Neck Surgery demonstrates its commitment to quality and transparency through the *Outcomes and Performance 2017 Report*. Introducing programs in virtual reality and web-based applications for patient reported outcomes, the Department exemplifies the introspection necessary to improve patient outcomes and resident training. Amidst a rich and dynamic academic environment, the Department's residents and fellows participate in a wide range of clinical and research experiences with more technological flexibility than ever. These activities are laying the groundwork for excellence and challenging boundaries in all subspecialties of otolaryngology.

It is my pleasure to share with you the advances and strides the Department has made this year, as the team continues to redefine precision medicine and expedite optimal bench to bedside care for each patient.

A handwritten signature in black ink that reads "Dennis".

Dennis S. Charney, MD
*Anne and Joel Ehrenkranz Dean
Icahn School of Medicine at Mount Sinai
President for Academic Affairs
Mount Sinai Health System*

Message from the Chair



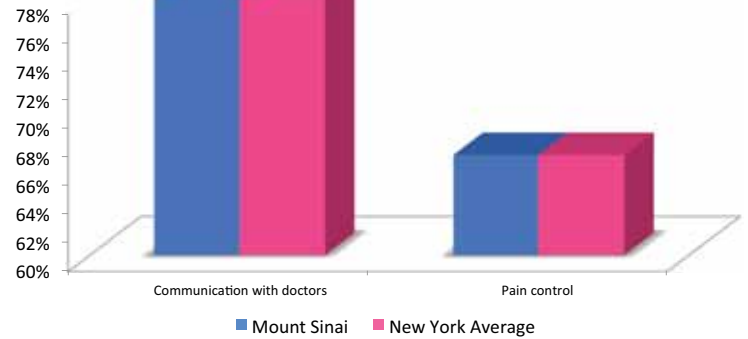
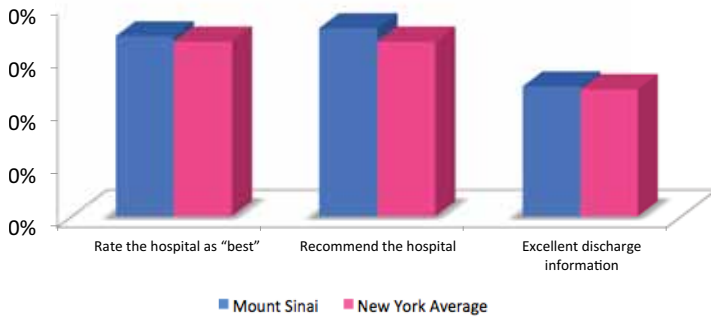
In 2017, the Department began expanding the educational focus, exposing all residents, fellows, and faculty to advanced procedures and state-of-the-art technology across multiple teaching hospital locations. This effort will be followed by a combined Icahn School of Medicine at Mount Sinai and New York Eye and Ear Infirmary of Mount Sinai training program this year. The new program will benefit resident training by bringing together nationally recognized programs in head and neck surgery, neurotology, laryngology, rhinology and facial plastic and reconstructive surgery. The integration will further improve training in pediatric otolaryngology, sleep surgery, and vascular malformations, and enhance the Head and Neck Cancer Research Program and other investigational activities. In this year's *Outcomes and Performance Report*, we highlight the clinical research and programs that will benefit from this integration.

A handwritten signature in black ink that reads "Eric M. Genden" with a long horizontal line extending to the right.

Eric M. Genden, MD, MHCA, FACS
*Isidore Friesner Professor and Chair
Department of Otolaryngology – Head and Neck Surgery
Mount Sinai Health System*

The Patient Hospital Experience

The patient hospital experience is a measure of critical aspects of patients' interactions, such as communication with doctors, the responsiveness of hospital staff, pain management, communication about medicines, discharge information, overall rating of hospital, and if they would recommend the hospital. Working with Mount Sinai's clinical leadership, the Department of Otolaryngology – Head and Neck Surgery continuously strives to improve our patient's hospital experience by addressing their needs.



Source: The Centers for Medicare and Medicaid Services and Hospital Consumer Assessment of Healthcare Provider and Systems Survey, Medicare.gov Hospital Compare, <http://www.hospitalcompare.hhs.gov>

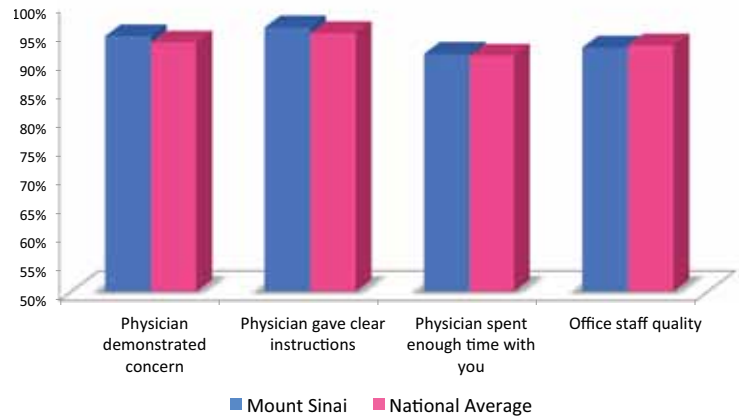
Source: The Centers for Medicare and Medicaid Services and Hospital Consumer Assessment of Healthcare Provider and Systems Survey, Medicare.gov Hospital Compare, <http://www.medicare.gov/HospitalCompare/profile>

The Patient Practice Experience

The patient practice experience reflects occurrences and events across the continuum of care. We believe that the patient experience extends beyond patient satisfaction surveys; it reflects the level of individualized care and managing the patient's expectations. Hence, we emphasize education and personalized treatments for each patient at Mount Sinai.



Source: Press Ganey Patient Experience Survey



Source: Press Ganey Patient Experience Survey

Head and Neck Institute/ Head and Neck Oncology

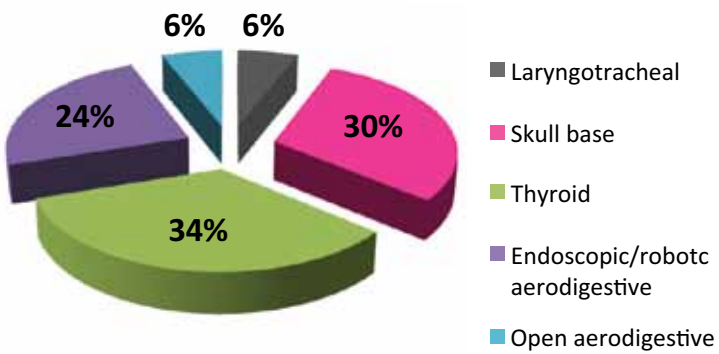
“Innovative clinical trials and groundbreaking research played a critical role at the Head and Neck Institute and our training programs this past year. Technology continued to be a strong force of progress, particularly with the study of cost efficiencies and outcomes.”

Dr. Eric M. Genden
Isidore Friesner Professor and Chair
Department of Otolaryngology –
Head and Neck Surgery
Mount Sinai Health System

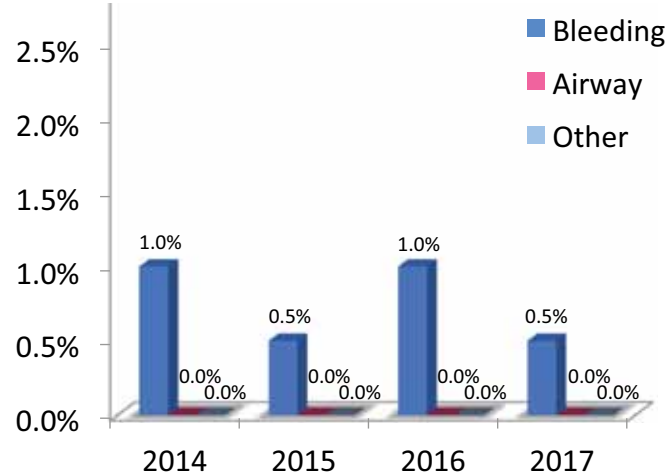


The Mount Sinai Health System’s Head and Neck Institute/Division of Head and Neck Oncology continued its high volume of cases in 2017, along with an emphasis on groundbreaking research and excellence in resident/fellow training. Housing the largest TORS program in the country, Mount Sinai’s Head and Neck Institute broadened its spectrum of innovative trials for patients with human papilloma virus (HPV)-related oropharyngeal cancers, and the research team forged new efforts to study efficiencies and devise techniques and protocols to optimize them.

Case Distribution



Complications Related to Robotic Surgery

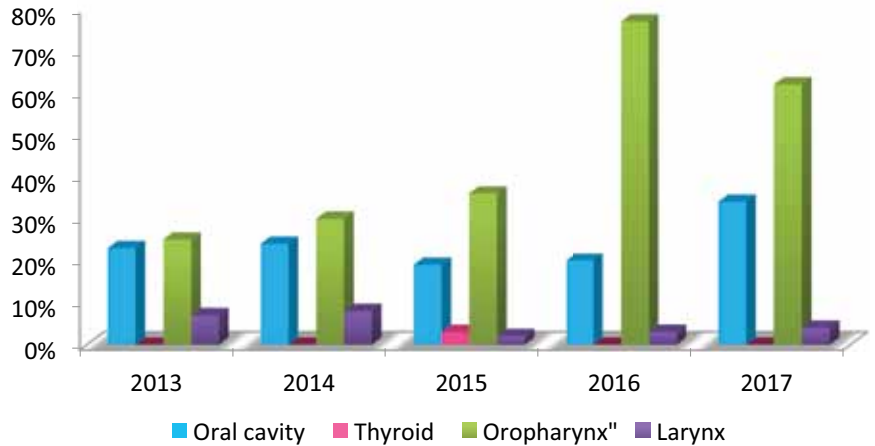


Head and Neck Oncology Clinical Trials Program

Innovative clinical trials are critically important to patient care and provide patients an opportunity to gain access to the newest treatments, often at no cost. As part of the NCI-designated Tisch Cancer Institute, the Head and Neck Institute and Head and Neck Cancer Research Program has consistently remained a top performer within the solid tumor research program at Mount Sinai in terms of clinical trial accrual. We continue to maintain a wide portfolio of state-of-the-art clinical trial options for those afflicted with head and neck cancer.

At Mount Sinai we are committed to expanding the clinical trial options available to our patients, and ensure that patients have access to state-of-the-art treatment, while maintaining high standards of safety and monitoring for those who choose to participate in these exciting opportunities.

Head and Neck Oncology Clinical Trial Enrollment



Effect of Extracapsular Extension on Local and Distant Control in HPV-related Oropharyngeal Cancer

Jeffrey Shevach, MD; Adam Bossert, MS3; Richard L. Bakst, MD; Jerry Liu, MD; Krzysztof Misiukiewicz, MD; Jessica Beyda, MD; Brett A. Miles, MD; Eric M. Genden, MD; Marshall R. Posner, MD; Vishal Gupta, MD

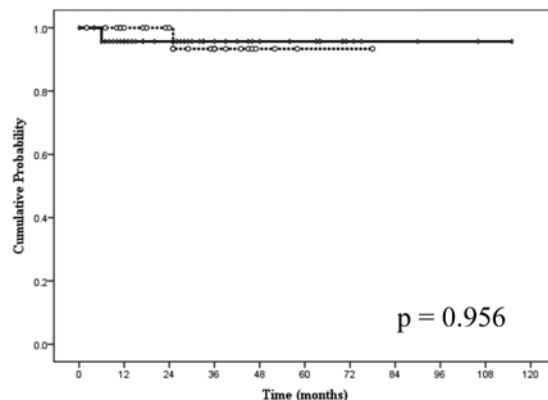
Extracapsular extension (ECE) of tumor in cervical lymph nodes in patients with head and neck cancer is associated with poorer survival and generally warrants more aggressive therapy for many patients. However, with the rise in HPV-related oropharynx cancers, patients have experienced excellent cure rates and improved outcomes, but little data is available regarding the impact of ECE in this population. Many of the current treatment guidelines recommend the addition of chemotherapy to treatment in patients with ECE, despite the lack of HPV-specific data. The Tisch Cancer Institute at Mount Sinai has significant expertise in treating HPV-related head and neck cancer, and the purpose of this investigation was to determine the impact of ECE in this population using data from the Mount Sinai experience.

The study examined 75 patients of which 34% had ECE noted after initial surgical management. Despite the fact that this group underwent more frequent chemotherapy and higher average doses of radiation, the data indicated that the presence of ECE negatively impacted survival.

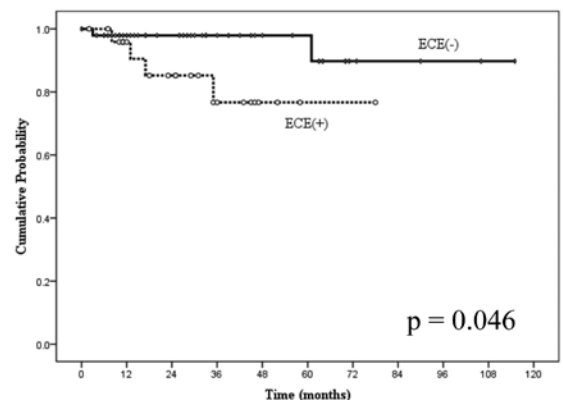
Interestingly, the decreased survival when ECE was present appeared to be related to distant metastasis as no statistical impact was noted with locoregional control.

These findings offer data that characterizes HPV-related head and neck cancer in order to avoid aggressive therapy in patients who will not benefit, and ensure patients receive more aggressive treatment when warranted to improve survival.

Locoregional Control



Distant Control



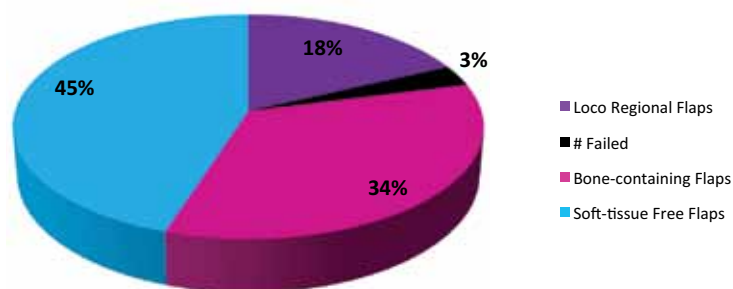
A Comprehensive Approach to Functional Palatomaxillary Reconstruction Using Regional Flaps and Free Tissue Transfer: Report of Reconstructive and Prosthodontic Outcomes of 140 Patients

Mark L Urken, MD; Ansley M Roche, MD; Kimberly J Kiplagat, BA; Eliza H Dewey, BA; Cathy Lazarus, PhD; Ilya Likhterov, MD; Daniel Buchbinder, DMD, MD; Devin J Okay, DDS

Prosthetic obturators were historically used to restore palatomaxillary defects. Although this removable device may be appropriate for some patients, several limitations persist. A few examples of these challenges include patient discomfort while using obturator, and social and psychological trauma as a result of using the obturator for eating and speaking. Additionally, for patients with trismus, introducing and removing a bulky obturator is a significant challenge to overcome. However, advances in local and free tissue transfers have provided a viable alternative for appropriately selected patients to be restored to a near-normal level of deglutition and articulation.

In this review article, Dr. Mark Urken et al. reported the largest series of palatomaxillary reconstructions using the entire spectrum of regional and free tissue transfers performed in both the primary and secondary settings by a single reconstructive surgeon. One hundred and forty patients were reconstructed with a total of 159 local, regional, and free flaps with a 96.7% success rate. (Table 1).

Table 1



Seventy-four patients (52.8%) underwent prosthodontic rehabilitation, with 183 implants placed and an 86% success rate. Palatomaxillary reconstruction using local, regional and free tissue is a safe and effective way to restore patients with palatomaxillary defects without compromising the ability to maintain close surveillance.

In 2018, we will analyze and report on the outcomes of 21 of the 140 patients who received multiple palatomaxillary reconstructions for a variety of reasons including recurrence, trauma, and functional problems.

Using Lean to Improve Patient Safety and Resource Utilization After Pediatric Adenotonsillectomy

In 2017, Dr. Mingyang Gray, PGY-3 resident, and Dr. Benjamin Malkin, former Assistant Professor and Regional Director of Otolaryngology at NYC Health+Hospital Queens, conducted a quality improvement project using Lean methodology to provide better care for pediatric patients at Elmhurst Hospital, a public teaching hospital located in the most diverse neighborhood in New York City. An internal review revealed that more than one-third of children who underwent adenotonsillectomy at Elmhurst Hospital presented to the emergency room prior to their postoperative clinic visit. Using Lean problem-solving tools, a multidisciplinary team of providers created a standard work checklist and postoperative instructions in an effort to reduce variations to care and proactively address pain and dehydration, the most common complaints that brought patients to the ED.

The overall data, which will be published in 2018, indicated promising results applying Lean principles to improve our quality of care and resource utilization. Plans are underway to apply these principles and tools to other processes to improve patient outcomes and decrease cost of care.

Understanding Outcomes Disparities in New York State Using the SPARCS Database

In 2017, Dr. Alfred Marc Iloreta served as a summer research mentor to Anthony Yang, now a second-year medical student, who created a computer program to extract data from the Statewide Planning and Research Cooperative System. The SPARCS database has since been used by members of our department to identify disparities in outcomes among patients of different socioeconomic backgrounds across the state. The team has collaborated with various divisions within the Department of Otolaryngology – Head and Neck Surgery, as well as colleagues in the Department of Neurosurgery. This data will help steer future outcomes research in order to better serve our patient population.

Facial Plastic and Reconstructive Surgery

“Innovative, high quality care is the hallmark of the Division of Facial Plastic & Reconstructive Surgery and the foundation for continuously driving improved patient outcomes.”

Dr. Joshua Rosenberg
Co-Chief of the Division of Facial Plastic and Reconstructive Surgery
Mount Sinai Health System



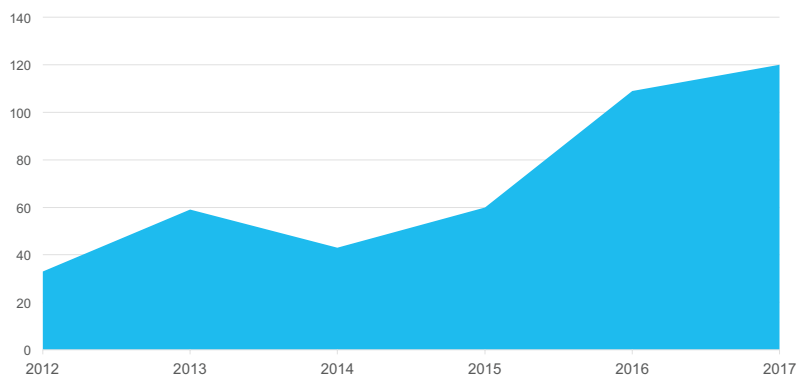
Rehabilitation of Facial Nerve Paralysis

Facial nerve paralysis represents a severe form of facial disfigurement with potentially devastating social, psychological, and functional problems for affected patients. Mount Sinai’s Facial Nerve Paralysis Program involves a multidisciplinary approach ensuring patients receive all aspects of care in one setting.

For many patients with Bell’s Palsy, recovery is often characterized by significant facial spasm and poor facial movement. The before and after photos of the patient below demonstrate improved smiling and facial balance after facial retraining with our specialized physical therapy team and Botox treatments to selectively relax key muscles of facial expression.



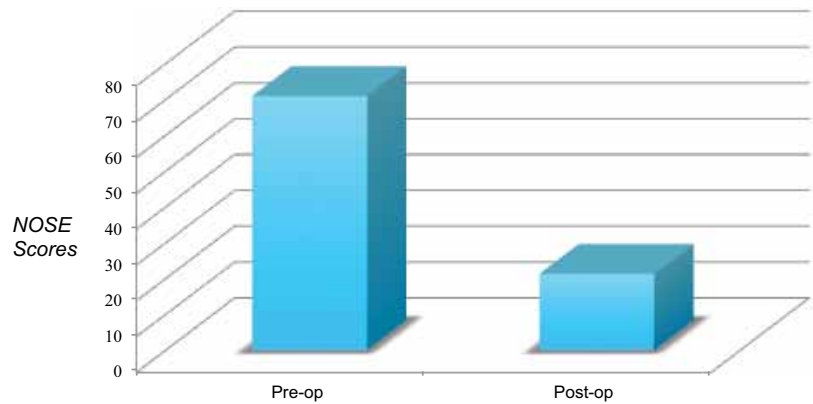
Facial Reanimation Surgery Volume



Improved Outcomes After Nasal Surgery

The success of rhinoplasty performed for either aesthetic and/or functional purposes is measured by the objective assessment of pre and post surgical nasal breathing using the validated NOSE (Nasal Obstruction Symptom Evaluation) scale. NOSE scores can stratify the degree of patients' nasal obstruction ranging from normal nasal breathing (NOSE < 25) to extreme nasal obstruction (NOSE > 75). Our patients' average NOSE score was 70.8 upon presentation and 21.3 at three months after surgery.

Outcomes after Septorhinoplasty



Revision Rhinoplasty: Form and Function

Rhinoplasty is one of the most common plastic surgeries performed in the United States. Along with performing a high volume of nasal surgery, Mount Sinai's Division of Facial Plastic & Reconstructive Surgery specializes in "revision rhinoplasty" - correcting aesthetic and/or functional outcomes after prior septorhinoplasty. Pictured to the right is a patient who underwent revision rhinoplasty with a rib cartilage graft after prior surgery had left her with little nasal framework to support breathing or an acceptable appearance.



Newborn Ear Molding

Children with auricular deformities suffer tremendous psychosocial morbidity with depression prevalence rates of 55%, according to *Annals of Plastic Surgery*. Decreased self-esteem and social isolation are factors that have been found to impact psychosocial health in these children. Surgical correction of ear deformities is generally postponed until ages 5-6 when ear development is near adult size. However, nonsurgical early intervention has been advancing and is currently the first line of treatment in the Division of Pediatric Otolaryngology of the Mount Sinai Health System. Treatment time for ear molding at other major centers around the world is an average of 32.7 days with improved shaping of the ear success rates as high as 89% when used in constricted ears, Stahl's ear deformities, prominent ears, and cryptotia.

Throughout a one year period, our Division had a 100% success in improved shaping, as reported by parents with a total treatment time average of 14 days in patient populations that included prominent ears and Stahl's ear deformities. These numbers are a result of early treatment starting at prior to three weeks of age when circulating maternal estrogen is still present in the baby. Additionally only two weeks of treatment has yielded excellent results, thereby eliminating the cost of a second round of molding material. In other studies 48% of ears were corrected with a single application of ear molding, as compared to Mount Sinai's 100% correction with a single two-week treatment.



Laryngology

“We continue to expand our model of interdisciplinary voice and swallowing clinics throughout the Mount Sinai Health System. This practice allows us to develop pathways for disease management, track outcomes and evaluate patient and clinician satisfaction. Our goal is to use this information to provide high value care for patients with disorders of voice and swallowing.”

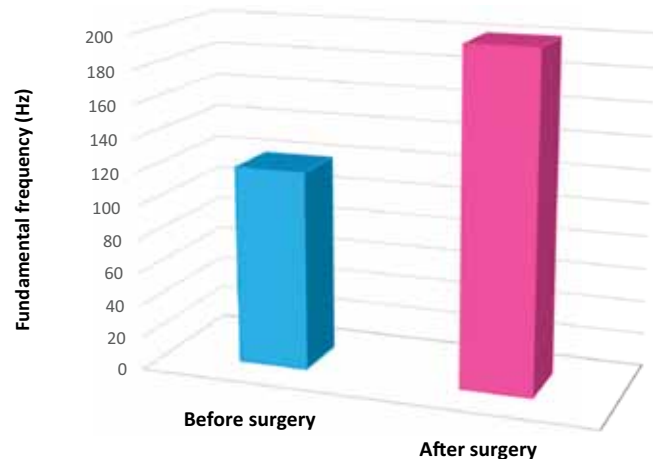
Dr. Mark S. Courey
Chief of the Division of Laryngology
Director of the Grabscheid Voice and Swallowing Center
Mount Sinai Health System



In 2017 the Division of Laryngology expanded clinically. Through the maturation of practices, patient visits for physicians and speech language pathologists grew in all areas.

One of our fastest areas of clinical growth has been in the management of vocal difficulties in trans and non-binary people. Recognizing the need for care in this emerging group of individuals, members of the Grabscheid Voice and Swallowing Center have collaborated with the Center for Transgender Medicine and Surgery of Mount Sinai, since its inception to improve the quality of lives in this patient population. Trans men and women experience significant gender dysphoria related to incongruence between their voice and their gender identity. Our voice is often our initial means of presenting ourselves to those with whom we come into contact. Incongruence and non-acceptance of our style of presentation leads to social isolation and reduced productivity. Unguided attempts to correct

Pitch Increases After Glottoplasty



Note: In the general population, the average frequency for men is 85-180Hz, whereas women are 165-255Hz.

this perceived incongruence can lead to ineffective strategies of compensation, discomfort and physical pain. Patients presenting to the Grabscheid Voice and Swallowing Center work with a team of knowledgeable individuals, both physicians and speech language pathologists, who have additional interest and training in transgender voice to find patients' optimal voice to match their gender identity. Rather than creating certain speaking patterns, our practice focuses on targeting with the patient where they want to be vocally, and using behavioral therapies and surgeries to help guide them to that level.

Management of Benign Voice Disorders Outcomes

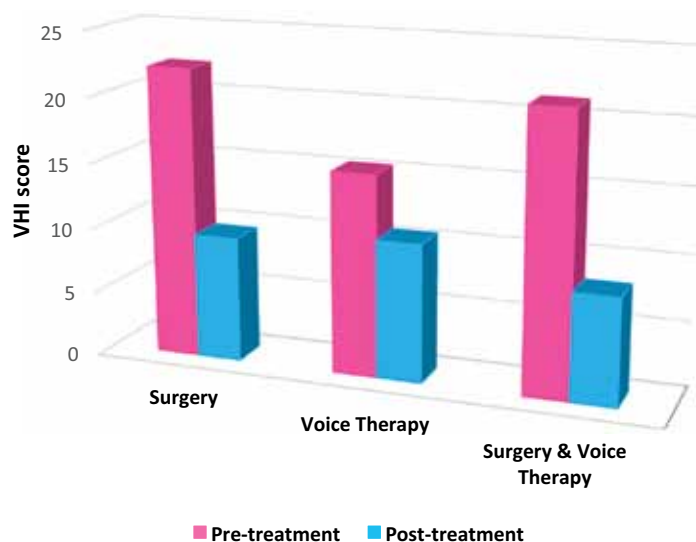
While not life-threatening, disorders of voice result in reduced social and professional productivity. Optimal treatment for patients with vocal fold polyps (VCP) remains controversial management; therefore, it needs to be personalized to provide the most efficacious outcome in the shortest amount of time. To develop interdisciplinary management pathways for patients with voice disorders due to benign diseases, we have begun reviewing previous outcomes for patients managed in the health system. Specifically in patients diagnosed with vocal fold polyps, we compared the short-term outcomes of treatment with voice therapy alone (VT), surgery alone (SUR) or voice therapy and surgery (VTS). One hundred and twenty patients with vocal fold polyps were identified; 19% had surgical management, 24% had voice therapy and 57% had combined modality treatment. Mean follow-up was 5.5 months. There were no recurrences in 115 patients (95.8%). Significant patient reported improvement in voice was greatest in patient who underwent surgical excision and surgical excision with voice therapy.

Our next steps are to provide value for management strategies in terms of improved quality of life and work productivity. To accomplish this we have begun calculating cost of treatment per episode and contacting patients to identify long-term disease free rates for patients in different treatment arms.



Using the video endoscope, Dr. Mark Courey mentors Fellow Matthew Naunheim through the nuances of an effective Wendler glottoplasty.

Management of Vocal Fold Polyps: Surgery Combined with Voice Therapy Produces the Most Improvement



Note: VHI is a patient-reported outcome of voice handicap. Lower scores indicate less handicap.

Oral and Maxillofacial Surgery

“By utilizing Virtual Surgical Planning, 3D printing, and cutting guides, the Division of Oral and Maxillofacial Surgery is leveraging precision technology to enhance patient outcomes.”

Dr. Daniel Buchbinder
 Chief of the Division of Oral and Maxillofacial Surgery
 Mount Sinai Health System



The Division of Oral and Maxillofacial Surgery utilizes cutting edge, computer-based virtual surgical planning (VSP) techniques and CAD-CAM based cutting guides, as well as patient-specific implants to improve outcomes and decrease surgical time. VSP is an excellent tool for planning complex orthognathic surgeries and has been a routine part of our treatment planning process for several years. More recently, Mount Sinai became the first center in the U.S. to offer the use of patient-specific cutting guides and plates to further increase the predictability and precision of the surgical procedures. A study similar to the original VSP study is currently underway with results expected in the next year.

In 2017, we continued to challenge the VSP system and our clinical abilities by comparing the amount of actual maxillary anterior movement achieved in the OR to the predicted VSP measurement derived preoperatively. We analyzed 58 orthognathic cases performed in the last 12 months where a maxillary anterior advancement was planned and performed. The goal was to determine if the advancement was equal to the prediction. A simple linear measurement from the perpendicular line to the A point of the maxilla was measured in the pre-op and post-operative X-rays with the line of measurement parallel to the palatal plane. Once the maxillary AP distance was measured, it was then compared to the VSP prediction.

The results of this analysis revealed an impressive level of accuracy with a standard deviation for all of the procedures at 0.29mm from the predicted value, confirming the precision of this method of surgical planning.

Orthognathic Surgery Case Volume



Total Number of Cases	Mean (average)	Standard Deviation
58	0.36	0.29
Variance (Standard Deviation)	Population (Standard Deviation)	
0.09	0.28	
Variance (Population Standard Deviation)		
0.08		

Otology and Neurotology

“The Ear Institute at New York Eye and Ear of Mount Sinai experienced a growth trajectory in volume, research endeavors and technological breakthroughs in 2017. We further established Mount Sinai as a leader in clinical advances, such as endoscopic cholesteatoma and glomus tumor removal, and we remain committed to restoring our patients’ hearing – young and old, routine through complex.”

Dr. George Wanna
Site Chair, Mount Sinai Downtown
Chief of the Division of Otology –
Neurotology
Mount Sinai Health System



The Division of Otology/Neurotology and the Ear Institute at New York Eye and Ear Infirmary of Mount Sinai bring together a diverse group of experts in hearing, balance and skull base disorders affecting adults and children. Our team, comprised of experts in otology/neurotology and skull base surgery, pediatric and cochlear implant audiology, vestibular testing and rehabilitation, speech language pathology, social work, education of the hearing impaired, and early intervention, distinguishes the Ear Institute as one of the most integrated and comprehensive sites for otologic care in the region. In addition to the below surgical case volume, cochlear implant (CI) volume has steadily increased over the past few years, and our focus on endoscopic cholesteatoma and glomus tumor removal remains steadfast. Led by Drs. George Wanna and Maura Cosetti, CI research and clinical offerings - including the first use of the newly approved/released SlimJ electrode in the Northeast – aimed at expanding candidacy groups, novel technology for intraoperative testing, vestibular function and balance, electroacoustic stimulation, single sided deafness, and more have positioned the Ear Institute as a regional and national leader in implantable hearing devices.

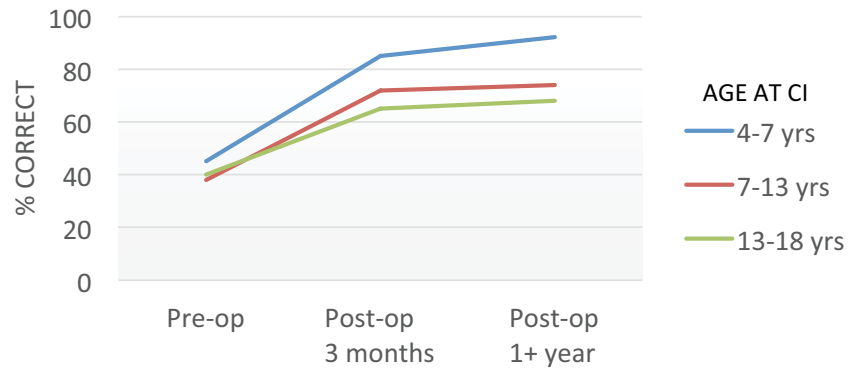
Surgical Case Volume for Common Otologic Procedures: Tympanoplasty, Mastoidectomy, and Stapedectomy



Despite advances in nearly all aspects of cochlear implantation, FDA Guidelines for pediatric cochlear implantation (CI) have not changed in over a decade. Children with greater hearing than current guidelines have been shown to receive significant benefit from CI. As a large pediatric CI center, NYEE had the opportunity to investigate the impact of age at CI on speech understanding in children with progressive SNHL.

Our results suggest improved outcomes when children are implanted at a younger age. Pediatric patients with progressive hearing loss who were implanted under expanded candidacy criteria demonstrated improvements in postoperative speech perception in the implanted ear and bimodally. While improvements occurred in the bilateral, best-aided condition post-CI, many children demonstrated progression of hearing loss and worsening of speech perception in the contralateral, non-implanted ear. More data on SP in the bi-modal pediatric population is needed.

Speech Perception and Age at CI



Dr Maura Cosetti examines Tessa Arden, a pediatric cochlear implant recipient, during her initial stimulation following bilateral cochlear implant surgery. Adopted from India at age 6 and diagnosed with chronic ear infections and hearing loss, Tessa was the first to receive the new “SlimJ” cochlear implant in the Northeast. “It was very emotional for everybody,” her mom, Kay, remarked about the first tear-filled moment Tessa could hear. Tessa has now begun a new journey of hearing and communicating, thanks to the multidisciplinary team at the Ear Institute of NYEE of Mount Sinai.

Extracorporeal Video Microscope “Exoscope” in Lateral Skull Base Surgery

Another development in 2017 was the introduction of transcranial endoscopic ear surgery and the endoscopic surgery of the lateral skull base using the cutting edge extracorporeal video microscope, also known as the “exoscope.” Mounted on a robotic arm, the exoscope allows high-resolution, 3D visualization, increased degrees of freedom for adjustment, increased ease of patient positioning and reduced surgeon fatigue in a fixed, unnatural posture. Eight lateral skull base cases (5 vestibular schwannoma excisions and 3 temporal encephalocele repairs) were performed in 2017 with the exoscope, obviating the use of the traditional binocular microscope. Additionally, skull base surgeons, Drs. Iloreta and Shrivastava employed the exoscope for endoscopic cases. No intraoperative complications were encountered in these cases and none required abandonment of the exoscope in favor of the microscope. Use of this technology maximized visualization without compromise in patient safety. Limitations included decreased depth perception and increased operative time. Dr. Wanna will be publishing on his findings this year.

Dr. Maura Cosetti (not pictured), Dr. Costas Hadjipanayis and Neurosurgery Chief Resident Dr. Christopher Sarkiss use the exoscope in a middle fossa repair of a temporal lobe encephalocele.



Pediatric Otolaryngology

“The Division of Pediatric Otolaryngology continues to look for opportunities to improve the outcomes of common pediatric procedures such as tonsillectomy and removal of preauricular cysts. We aim to have our patients resume their normal daily activities quickly by mitigating the risk of reoccurrence and other complications.”

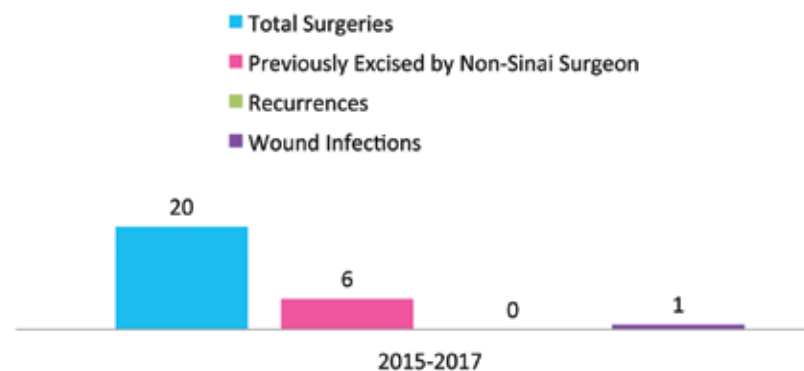
Dr. Alyssa Hackett
Pediatric Otolaryngologist
Division of Pediatric Otolaryngology
Mount Sinai Health System



Preauricular pits and their associated cysts are a relatively common congenital finding. When they become infected surgical removal is usually successful in eliminating the problem. Simple excision has been reported to have a recurrence rate of up to 30%.

Mount Sinai's Division of Pediatric Otolaryngology team employs an extended approach to help reduce this rate. Our approach has a recurrence rate reported in the literature of around 3%, but our outcomes over the past three years have been significantly better than this benchmark with no recurrences.

Mount Sinai Surgical Experience for Pediatric Preauricular Pit/Cysts



Six of our 20 patients had previous excisions by other surgeons. There was only one postoperative wound infection and that child is presently healed without evidence of recurrence.

Rhinology and Skull Base Surgery

“The Division of Rhinology and Skull Base Surgery outpaced last year’s volume of complex inflammatory and neoplastic cases involving the paranasal sinuses and skull base. Our researchers, who are studying the use of virtual reality in the classroom, presented at multiple national meetings and participated in clinical trials that will hopefully improve the quality of life of our patients in the near future. Together, our goal is personalizing care for each patient in order to optimize outcomes - specialty care one patient at a time.”

Dr. Satish Govindaraj
Chief of the Division of Rhinology and Skull Base Surgery
Vice Chair of Clinical Affairs
Mount Sinai Health System

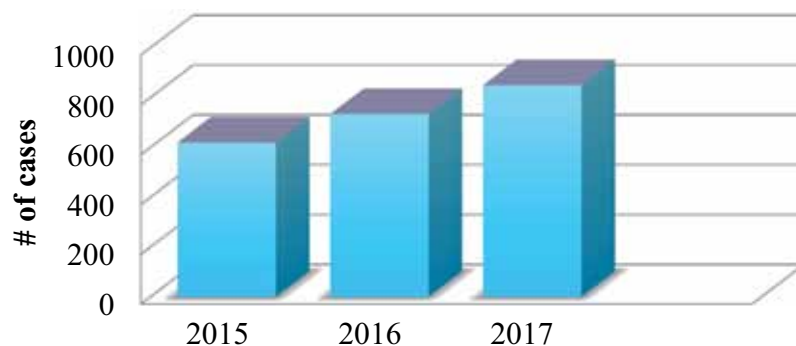


The Division of Rhinology and Skull Base Surgery at the Mount Sinai Health System is comprised of five fellowship trained rhinologists and is one of the largest Divisions of its kind across the country. Throughout 2017, we continued to face the most challenging cases in both inflammatory and neoplastic paranasal sinus disease. Our team authored more than 15 publications this year and has been actively participating in clinical trials that we hope will impact the future management of our patients.

Additionally, our team delivered 14 oral presentations at national meetings, was awarded 3 research grants, participated in 6 clinical trials, and continued to forge the use of virtual reality in the classroom and the operating room. We also fostered our relationship with The Mount Sinai – National Jewish Health Respiratory Institute, so our most challenging patients can continue to benefit from a multidisciplinary approach to their care. We are excited about the future of rhinology in our health system, as our group continues to push the boundaries of rhinology and skull base surgery, and deliver the highest level of care – one patient at a time.

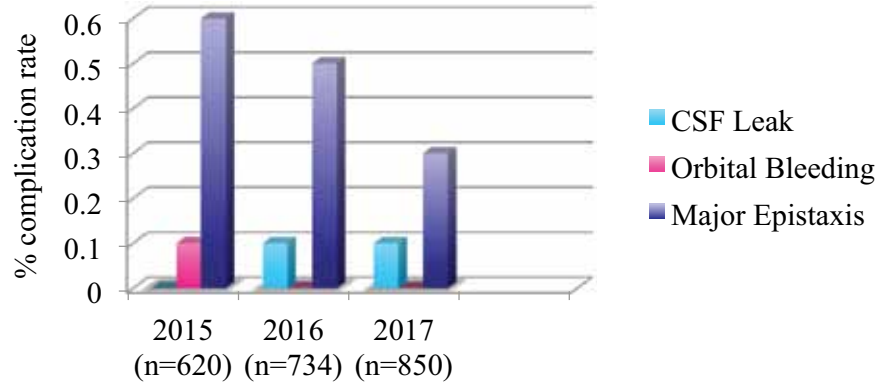
Endoscopic Sinus Surgery Case Volume

The Division of Rhinology specializes in the comprehensive management of neoplastic and inflammatory conditions that affect the nose and sinuses. One of the most commonly performed procedures is functional endoscopic sinus surgery.



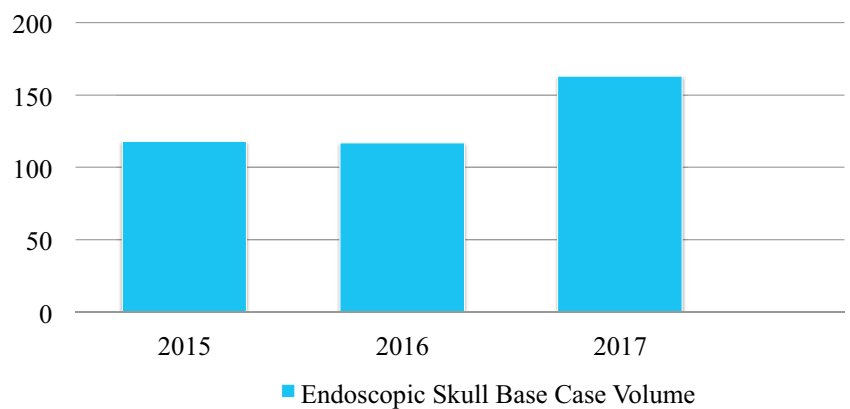
Primary and Revision Endoscopic Sinus Surgery – Complications

Our fellowship trained rhinologists specialize in both primary and revision endoscopic sinus surgery. Each year our surgical volume has experienced steady growth and our complication rate remains low. Of note is the steady decline in postoperative major epistaxis rate (defined as requiring postoperative packing placement or surgical control of bleeding) over the past three years.



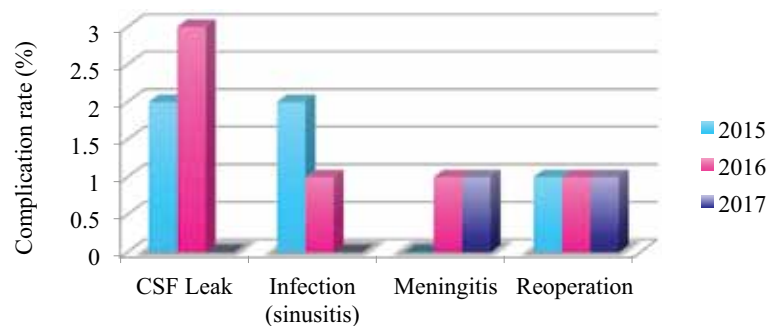
Endoscopic Skull Base Case Volume

The Rhinology and Skull Base Surgery team collaborates closely with the Department of Neurosurgery at the Skull Base Surgery Center in the management of skull base pathology. Over the last three years, this multidisciplinary center has experienced steady growth in endoscopic skull base case volume. The endoscopic approach results in less morbidity and a shorter hospital stay for our patients.



Endoscopic Skull Base Surgery Complications

The Skull Base Surgery Center has seen a steady growth in the number of endoscopic skull base cases with a complication rate that remains below 2%. Despite a higher volume of skull base cases, our CSF leak rate was 0% for 2017.



Sleep Surgery

“In an effort to meet the needs of our patients experiencing difficulties breathing and sleeping, the Division of Sleep Surgery expanded its breadth of services to include Inspire Therapy for those unable to comply with CPAP. Outcomes have been outstanding and our patients are thrilled with their quality of life.”

Dr. Fred Lin

*Chief of the Division of Sleep Surgery
Mount Sinai Health System
Director of Sleep Surgery
The Mount Sinai Hospital*



The Division of Sleep Surgery specializes in the comprehensive management of obstructive sleep apnea and sleep disordered breathing. Our team specializes in upper airway surgery including nasal surgery, palate surgery, maxillofacial surgery, and surgery of the tongue to improve airway obstruction. Mount Sinai is also one of the few centers in the New York tri-state area performing the Inspire® Therapy Hypoglossal Nerve Stimulator for which we have begun tracking outcomes and associated benefits and risks of the surgery. Surgical volume steadily increased from 70 to 97 to 110 cases per surgeon from 2015 to 2016 and 2017 respectively, demonstrating a significant percentage increase each year. Our research in the coming year is focused on improving perioperative pain control and a decreasing lost days of work post-surgery by testing new intra-operative and post-operative pain control techniques.

The Division of Sleep Surgery continued to work closely with the Divisions of Pulmonology, Endocrinology, and Metabolic and Bariatric Surgery in 2017 to offer a multidisciplinary approach to the treatment of sleep apnea and snoring. We also employ a team-based approach within our Department, collaborating with the Division of Oral and Maxillofacial Surgery to provide dental appliances and maxilloamandibular advancement surgery.



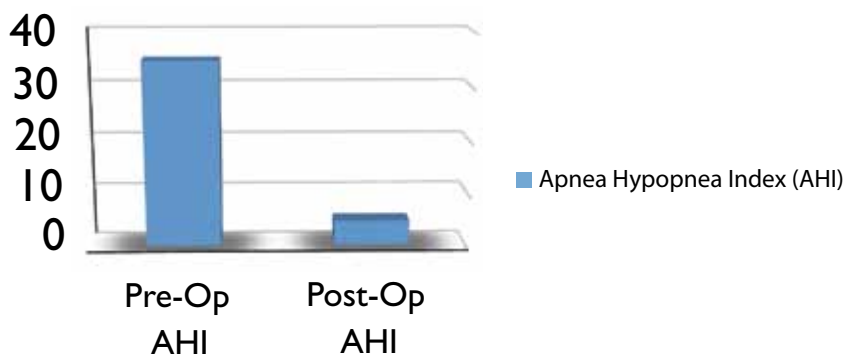
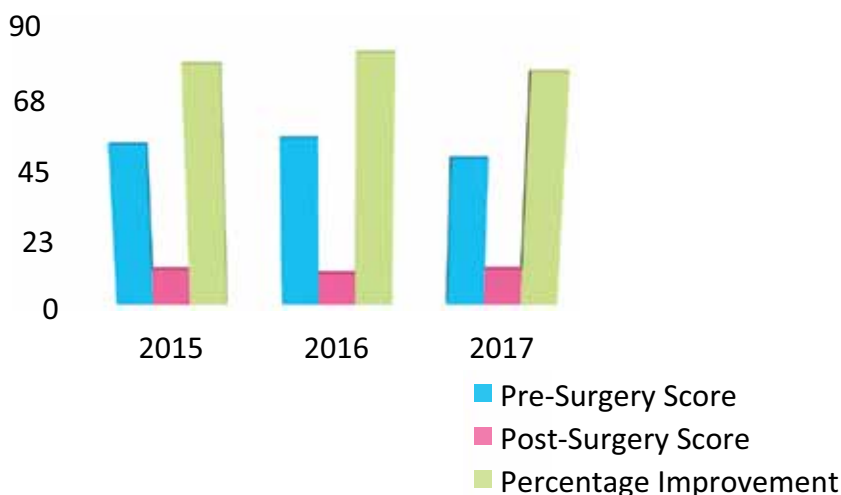
SNORE-25 Quality of Life Improvement

Our goal is to improve not only the health, but also the quality of life of sleep apnea patients. We measure all patients pre- and post-treatment with the SNORE-25 quality of life measure, which is a validated quality of life survey. Our results have shown significant gains in improvement of sleep quality and daytime symptoms of nighttime sleep disturbances post surgery.

Additionally, in 2017 our sleep surgeons had a less than 1% complication rate regardless of OSA severity with no readmissions and no mortalities.

HgN Stimulator Implants

Mount Sinai's Inspire Therapy Implant Program has continued to grow with proven efficacy for patients who fail CPAP. Hypoglossal nerve stimulation (Inspire Therapy) is performed at two sites within the Mount Sinai Health System for patients with obstructive sleep apnea. Twelve patients were implanted in 2017 with no complications. Significant improvement was seen in sleep quality, quality of life measures, snoring, and Apnea-Hypopnea Index (AHI). Additionally, an 86.5% improvement was seen in AHI. Patient adherence to therapy has been excellent with an average use of 7.1 hours per night. We anticipate continued growth in this Program in the forthcoming year, and plan to conduct research studies comparing the efficacy of it versus traditional therapies.



Vascular Birthmarks and Malformations

“We have expanded our in-network services and created a comprehensive office for patients with all types of vascular anomalies, whether needing medical, laser, or surgical therapy.”

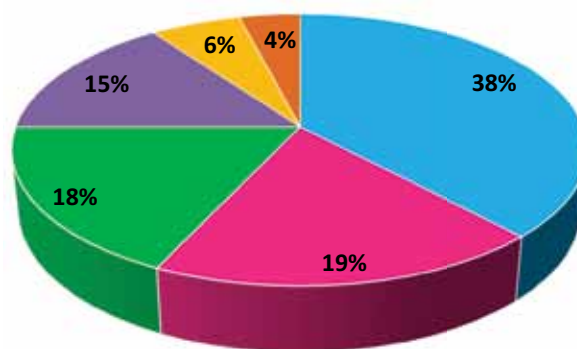
Dr. Gregory Levitin
Director, Vascular Birthmarks and Malformations
Mount Sinai Health System



As Director of Vascular Birthmarks and Malformations for the Mount Sinai Health System, Dr. Levitin has helped pioneer minimally invasive surgical techniques for complex vascular malformations of the head and neck in both children and adults. Offering a range of medical, laser, and surgical therapy, our physicians treat all types of vascular anomalies, including hemangiomas, port wine stains, venous malformations, lymphatic malformations, arteriovenous malformations, and also congenital nevi. Our multidisciplinary team of physicians is committed to conducting research and developing innovative, personalized care programs to improve patient outcomes, ensure patient safety, and increase patient satisfaction.

In 2017, the Vascular Birthmarks and Malformations Program continued year over year growth, particularly with complex vascular malformations. During this time, our faculty led a pilot study for adult patients with complex venous malformations of the midfacial region in an effort to improve outcomes. This initial group of patients presented with persistent or recurrent

Conditions Treated



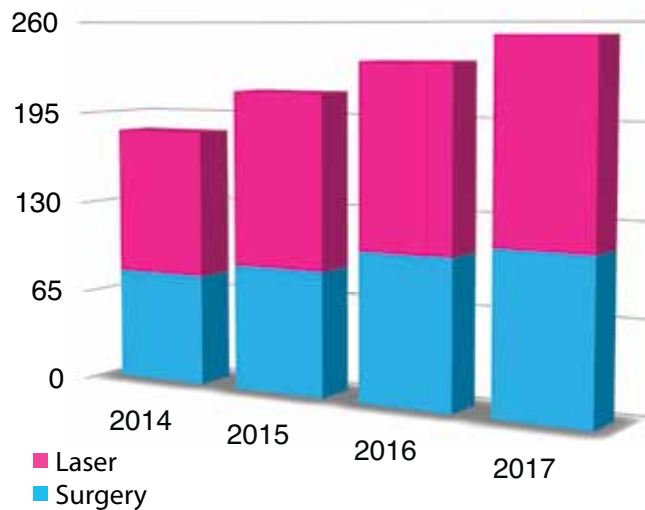
- Hemangioma
- Port Wine Stain
- Venous Malformation
- Lymphatic Malformation
- ArterioVenous Malformation
- Congenital Nevus

Vascular Birthmarks and Malformations

disease and had undergone an average of 11.2 procedures. A new strategy utilizing a single stage, outpatient procedure combining surgical resection with intraoperative sclerotherapy was performed. All patients were successfully treated with complete removal of their facial vascular malformation, no bleeding complications, and with facial nerve function fully preserved. This “one and done” approach is now being applied to a larger group of patients with complex malformations of the midface, neck, and tongue with long-term follow up for functional outcomes and disease control.

Our faculty members have conducted extensive research for years to identify risk factors affecting patient outcomes and to evaluate the effectiveness of different treatment alternatives. Our hope is that our findings and experience—combined with the research of colleagues nationwide—will help improve the quality and safety of vascular birthmark surgery for patients everywhere.

Total Procedures



Dr. Gregory Levitin with Lucas McCulley from Boise, Idaho, who was first introduced to Dr. Levitin on the syndicated show “The Doctors.” Lucas underwent a single-stage reconstructive surgery for his complex vascular malformation that will be profiled on a subsequent episode of “The Doctors” in early 2018.



Faculty

General Ear, Nose and Throat



Bart Castellano, MD
Mount Sinai
Doctors
Staten Island
718-420-1279



David Culang, MD
Mount Sinai Union Square
212-844-8450



Sam Huh, MD
Site Chief
Mount Sinai Brooklyn
(MSB)
718-756-9025



Harry Pantelides, MD
Mount Sinai Queens (MSQ),
Mount Sinai Doctors
101 Broadway
718-384-6933

Facial Plastic and Reconstructive Surgery



Matthew Hirsch, MD
New York Eye and Ear
Infirmary of Mount Sinai
(NYEE) 212-979-4200



**William Lawson, MD,
DDS**
MSH
212-241-9410



Joshua Rosenberg, MD
Mount Sinai Doctors
East 85th St., Mount Sinai
Doctors Staten Island
212-241-9410, 718-420-1279



Joseph Rousso, MD
NYEE
212-979-4200

Head and Neck Oncology/Thyroid



Raymond Chai, MD
Mount Sinai
Union Square
212-844-8775



Eric Genden, MD
Chairman, Mount Sinai
Health System
212-241-9410



Ilya Likhterov, MD
Mount Sinai
Union Square,
MSB
212-844-8775



**Brett Miles, DDS,
MD**
MSH
212-241-9410



Laryngology/Voice and Swallowing



Mark Courey, MD
MSH, Mount Sinai Doctors
Columbus Circle
212-241-9425



Matthew Mori, MD
NYEE
212-241-9425



**Daniel Buchbinder, DMD,
MD**
Mount Sinai Union Square
212-844-8775



**Vincent Carrao,
DDS, MD**
Mount Sinai Doctors
East 85th St.
212-241-5600

Otology/Hearing and Balance



Maura Cosetti, MD
NYEE, MSH
212-979-4200



Ronald Hoffman, MD
NYEE
212-979-4200



George Wanna, MD
Site Chair, Mount Sinai
Downtown, NYEE
212-979-4200



Joseph Bernstein, MD
NYEE
646-438-7878

Pediatric ENT

Rhinology and Skull Base Surgery



Patrick Colley, MD
NYEE, Mount Sinai
Doctors
Columbus Circle
212-979-4200



Anthony Del Signore, MD
Mount Sinai Union Square
212-844-8450



Satish Govindaraj, MD
Mount Sinai Doctors
East 85th St., Mount Sinai
Doctors Staten Island
212-241-9410,
718-420-1279



Alfred Illoreta, MD
Mount Sinai Doctors
East 85th St.
212-241-9410

Locations/Contact Information:

The Mount Sinai Hospital (MSH)

5 East 98th Street, 8th Floor, New York, NY 10029,
212-241-9410

Mount Sinai Brooklyn (MSB)

3131 Kings Highway, Suite C1 – 2nd Fl.,
Brooklyn, NY 11234, 718-756-9025

Mount Sinai Union Square

10 Union Square East, New York, NY 10003,
212-844-8450, 212-844-8775 for Head and Neck
Oncology/Oral and Maxillofacial Surgery

New York Eye and Ear Infirmary of Mount Sinai (NYEE)

310 East 14th Street, 6th Fl., NY 10003, 212-979-4200

Mount Sinai Doctors Columbus Circle

200 West 57th Street, Suite 1410, New York, NY, 10019
212-241-9425 (Laryngology)
212-979-4200 (Rhinology)
212-957-6933 (Vascular Malformations)

Mount Sinai Doctors East 85th Street

234 East 85th Street, 4th Floor, New York, NY 10028,
212-241-9410

Mount Sinai Doctors Staten Island

2052 Richmond Road, Suite 1C,
Staten Island, NY 10306, 718-420-1279

Mount Sinai Doctors Tribeca

77 Worth Street, New York, NY 10013
212-966-6295

Mount Sinai Doctors Westchester

244 Westchester Avenue, West Harrison, NY 10604,
212-844-8775

Mount Sinai Doctors 101 Broadway

101 Broadway, Brooklyn, NY 11249
718-384-6933



Benjamin Tweel, MD
Mount Sinai Hospital
(MSH)
212-241-9410

Stimson Schantz, MD
NYEE
212-979-4200



Edward Shin, MD
NYEE
212-979-4200



Marita Teng, MD
MSH
212-241-9410



Mark Urken, MD
Mount Sinai Union Square,
Mount Sinai Doctors
Westchester
212-844-8775



Mike Yao, MD
MSH, MSQ
212-241-9410
(both locations)



Devin Okay, DDS
Mount Sinai Union Square
212-844-8775



Alan Schwimmer, DDS
Mount Sinai Union Square
212-844-8775



Michael Turner, MD, DDS
Mount Sinai Union Square
212-844-8775



David Valauri, DDS
Mount Sinai Doctors
East 85th St.
212-241-5600



Alyssa Hackett, MD
NYEE, Mount Sinai Doctors
East 85th St.
212-241-9410



Aldo (Vinny) Londino, MD
Mount Sinai Doctors
East 85th St.
212-241-9410

Sleep Surgery



Madeleine Schaberg, MD
NYEE, Mount Sinai
Doctors Tribeca
212-979-4200



Boris Chernobilsky, MD
Mount Sinai Union Square
212-844-8450



Fred Lin, MD
MSH, Mount Sinai
Doctors Staten Island
212-241-9410,
718-420-1279

Vascular Birthmarks/ Malformations



Gregory Levitin, MD
Mount Sinai Doctors
Columbus Circle,
Mount Sinai Doctors
101 Broadway

Otolaryngology – Head and Neck Surgery Health System Locations

- 1 Mount Sinai Hospital Faculty Practice**
5 East 98th St., NY, NY 10029
- 2 Center for Science and Medicine**
10 East 102nd St., NY, NY 10029
- 3 Mount Sinai Doctors East 85th St.**
234 East 85th St., NY, NY 10028
- 4 Mount Sinai Queens**
25-10 30th Ave.
Long Island City, NY 11102
- 5 Mount Sinai Doctors Staten Island**
2052 Richmond Rd.
Staten Island, NY 10306
- 6 Mount Sinai Union Square**
10 Union Square East
NY, NY 10003
- 7 Mount Sinai Doctors Westchester**
244 Westchester Ave.
West Harrison, NY 10604
- 8 Mount Sinai Brooklyn**
3131 Kings Highway
Brooklyn, NY 11234
- 9 New York Eye and Ear Infirmary of Mount Sinai**
310 East 14th St.
NY, NY 10003
- 10 Mount Sinai Doctors Columbus Circle**
200 West 57th St.
NY, NY 10019
- 11 Ear Institute**
380 2nd Ave.
NY, NY 10010
- 12 Mount Sinai Doctors Tribeca**
77 Worth St.
NY, NY 10013
- 13 Mount Sinai Doctors 101 Broadway**
101 Broadway
Brooklyn, NY 11249

