

OTOLOGY

1. BRIEF DESCRIPTION OF OTOLOGIC TRAINING

Rotations that include otologic training are a component of each of the four years of training.

- Longwood Rotation – PGY-2 through PGY-5 years
 - Clinic experience as PGY-2 (1/2 day every other week with Dr. Daniel Lee at BWH)
- Pediatric Otology – MEE PGY-2 rotation and Children’s Hospital PGY-3 rotation
 - Clinic and operative experience
- MEE Otology experience
 - Clinic experience as PGY-2 (1/2 day per week during General ORL rotation)
 - Dedicated Otology Rotation – PGY-4 and PGY-5 years.
 - The PGY-5 (chief resident) is the coordinator and leader of the inpatient consult service at MEE.

Temporal Bone Dissection Course

- Mandatory for all PGY-2 residents

Temporal bone laboratory experience is available during all four years of ORL training on a weekly basis in the temporal bone training laboratory at MEE.

2. CORE BASIC SCIENCE KNOWLEDGE

- Anatomy of the middle ear, eustachian tube, facial nerve, inner ear, neural pathways, and pneumatized spaces of the temporal bone;
- Basic embryology
- Physiology of the auditory and vestibular systems
- Molecular genetics and molecular biology relevant to otologic disease
- Pathology relevant to otologic disease
- Microbiology relevant to otologic disease
- Pharmacology relevant to otologic disease
- Biochemistry relevant to otologic disease
- Immunology relevant to otologic disease

3. CORE CLINICAL KNOWLEDGE

- Understanding of the pathogenesis and pathophysiology of common diseases of the ear
- Congenital, genetic and developmental defects
- Infections of the external, middle and inner ear and mastoid
- Ototoxic disorders of the auditory and vestibular systems

- Trauma to the temporal bone;
- Disorders of circulation that affect the ear
- Disorders of the peripheral and central auditory and vestibular systems that affect hearing and balance
- Facial nerve disorders
- Disorders of bone that affect the ear
- Otologic age-related disorders
- Neoplastic disorders of the external ear, middle ear, temporal bone
- Immune and idiopathic disorders that affect hearing, balance, and facial nerve function.

4. DIAGNOSTIC SKILLS

- Ability to obtain a complete and thorough history as well as a focused Otologic history
- Ability to perform a thorough general otolaryngologic physical exam, a specific otologic examination, and neurotologic examination
- Recognition of relevant comorbidities and how they may relate to a diagnosis at presentation and potential impact on management of the condition.
- Cost-effective and safe implementation of additional diagnostic testing
 - Imaging – CT scan, MRI
 - Biopsy – office based, operating room, FNA
 - Microbiology – timing and type of cultures
 - Genetic testing
 - Audiology
 - Vestibular testing
 - Facial nerve testing
- Appropriate use of consulting services including: Audiology, Hearing Aid Services, Vestibular Services, Neurosurgery, Radiation Oncology, Medical Oncology, neurology, medical genetics and interventional neuroradiology.
- Ability to create comprehensive differential diagnoses of hearing loss, vestibular disorders, facial nerve disorders, and neoplasia of temporal bone based on the diagnostic work-up.

5. MEDICAL MANAGEMENT

An enormous number of routine office, emergency, and non-surgical conditions fall in the purview of ORL. Over the course of the program, residents will be expected to become adept in the diagnosis, triage and management of the following disorders

- Emergency/Trauma
 - Temporal Bone fractures
 - Complications of acute and chronic otitis media
- Infections of the ear
- Neoplastic diseases and masses of the external ear, ear canal, middle ear, and temporal bone
- Hearing loss
- Vestibular disorders

- Facial nerve disorders

6. SURGICAL SKILLS

- Competence for assessing appropriate operative candidacy
 - Appropriate preoperative assessment including appreciation of medical comorbidities and need for medical and / or anesthesia consultation
 - Providing adequate and appropriate informed consent including expectations of surgical outcomes and course.
- Competence in intra-operative skills for the procedures listed below
- Competence in management of intra-operative and post-operative complications
- Competence in post-operative care

7. SPECIFIC SURGICAL PROCEDURES

At the completion of residency training, the resident should be competent in the following procedures:

- Myringotomy with tubes
- Tympanoplasty
- Ossiculoplasty
- Mastoidectomy
- Correction of exostoses
- Stapedectomy with or without laser
- Exploratory tympanotomy and repair of oval or round window fistulas
- Facial nerve decompression by tympanomastoid approach
- Facial nerve grafting by the tympanomastoid approach
- Tympanic neurectomy
- Labyrinthectomy by transmastoid approaches
- Round window labyrinthotomy
- Endolymphatic sac procedure
- Excision of lesions of the auricle
- Excision of glomus tympanicum or other middle ear tumors.

By the completion of training the resident should have a working knowledge, but may require additional training before independently performing, the following procedures:

- Facial nerve decompression by the translabyrinthine or middle fossa approach
- Resection of acoustic neuromas by the translabyrinthine, middle fossa, and posterior fossa approaches
- Vestibular nerve section by the middle cranial fossa, suboccipital or translabyrinthine approaches
- Labyrinthectomy by transcanal approach
- Cochlear implant surgery
- Temporal bone resection
- Excision of skull base tumor
- Reconstruction of congenital aural atresia or dysplasia

- Osseointegrated implants for auricular prosthesis or bone-anchored hearing aid
- Repair of CSF otorrhea
- Repair of semicircular canal dehiscence including occlusion of semicircular canal

8. GRADUATED EXPERIENCE/INCREASED RESPONSIBILITIES

A graduated experience and increase in responsibility are expected with advancing years of ORL training. The resident will assume increasing responsibility for diagnosis, medical management and surgical treatment for Otolaryngology patients

During the **PGY2 & 3 year**, the resident should be able to demonstrate

- Competence in basic diagnostic skills as well as the basic science and clinical core knowledge in Otolaryngology
- Competence in the fundamentals of the physical exam, history, and routine diagnostic procedures
- Familiarity with basic text materials and relevant medical literature
- A beginning understanding of the translation of relevant basic science to the clinical setting
- Working familiarity with related disciplines and adjuvant diagnostic testing and procedures, including their use and interpretation
- Basic familiarity with inpatient and outpatient evaluation and care.
- The ability to evaluate and triage urgent and emergency conditions
- Ability to identify and treat routine emergencies
- Basic familiarity with surgical procedures – including ability to perform more simple and routine surgeries as well as assist on complex, advanced or specialized procedures
 - Otomicrosurgical technique
 - Myringotomy and tubes
 - Tympanoplasty
 - Mastoidectomy
 - Exploratory tympanotomy
 - Excision of small lesions of auricle

During the **PGY4 & 5 year**, the resident should be able to demonstrate

- Refined understanding and application of fundamentals
- Refined use and critical assessment of relevant medical literature
- Refined understanding of translational clinical research
- More in-depth understanding of related disciplines and interventional alternatives
- Familiarity with specialized patient care and supervision of routine patient care issues
- Ability to Evaluate and treat specialized emergencies
- Competent surgical technique in the complex, advanced or specialized procedures listed above
- Ability to supervise and train junior residents in more simple and routine surgeries
- Development of team supervisory and administrative skills

9. ASSESSMENT OF SKILLS

An OSAT evaluation has been incorporated into the PGY-4 and PGY-5 Otolaryngology rotation, assessing stapedectomy and mastoidectomy. It is each resident's responsibility to assure that the OSAT is completed during the rotation.

- PGY – 4 Stapedectomy
- PGY – 5 Mastoidectomy

10. ABOTO CORE SURGICAL PROCEDURES

- Mastoidectomy
- Ossicular Chain reconstruction (including stapedectomy)
- Perform/Interpret Audiogram
- Tympanoplasty

11. EDUCATIONAL CONFERENCES IN OTOLARYNGOLOGY

- Temporal Bone Dissection Course (4 Saturday sessions during the PGY-2 year - mandatory)
- Otolaryngology Journal Club
- Special Problems in Otolaryngology
- Otopathology Conference

12. MILESTONES ASSESSMENT

- Chronic Ear (patient care)
- Pediatric Otitis Media (patient care)
- Hearing Loss (medical knowledge)
- Please see the below website for details
<https://www.acgme.org/acgmeweb/Portals/0/PDFs/Milestones/OtolaryngologyMilestones.pdf>

13. RECOMMENDED READINGS

1. Merchant SN and Nadol Jr JB: Schuknecht's Pathology of the ear. Third edition. People's Medical Publishing House, 2010.
2. Nadol JB Jr, McKenna MJ: Surgery of the ear and temporal bone. Second edition. Lippincott Williams and Wilkins, 2005.
3. Janfaza P, Nadol JB Jr, Galla RJ, et al. Surgical anatomy of the head and neck. Lippincott, Williams, and Wilkins. 2001. Chpts 2, 4, 9, 10.
4. Jackler RK, Brackmann DE. Neurotology. Elsevier Mosby, 2005. Selected chapters, especially recommended: Chapt 1 (Human brainstem auditory system), 39 (Meniere's Disease), 45 (Acoustic Neuroma), 73 (Electrical testing of the facial nerve).
5. The otologic and neurotologic chapters in a comprehensive fundamental textbook in otolaryngology, such as Cummings, Flint, Harker, et al: Otolaryngology-Head and Neck Surgery. Mosby Co., Fourth edition. 2005.

In addition, specific reading material will be assigned in Otolaryngology Journal Club, symposia and clinical rotations.