

# Curriculum

## DNB Broad Specialty

---



# Otorhinolaryngology

## (ENT)

- ◆ Programme Goal & Objectives
- ◆ Teaching and Training Activities
- ◆ Syllabus
- ◆ Competencies
- ◆ Log Book
- ◆ Recommended Text Books and Journals

---

**This page has been intentionally kept blank.**

---

# INDEX

S. No	Contents	Page No.
I	Programme Goal & Objectives	5
II	Teaching and Training Activities	6
III	Syllabus	7
IV	Competencies	18
V	Log Book	28
VI	Recommended Text Books and Journals	29

---

**This page has been intentionally kept blank.**

---

## I. PROGRAMME GOAL & OBJECTIVES:

### 1. PROGRAMME GOAL

The goal of the DNB ENT is to produce a competent ENT specialist who recognizes the health needs of ENT Patients.

### 2. PROGRAMME OBJECTIVES

At the end of DNB training the student should be able to:

- Practice the specialty ethically keeping in mind the requirement of the patient, community and people at large.
- Demonstrate sufficient understanding of basic sciences related to the specialty and be able to integrate such knowledge in the Clinical practice.
- Diagnose and manage majority of conditions in the specialty (clinically and with the help of relevant investigations)
- Plan and advice measures for the promotive, preventive and rehabilitative aspects of health and diseases in the field of ENT.
- Play the assigned role in the implementation of National Health Programs like National program for prevention and control of deafness and awareness of other National programs
- Demonstrate competence in basic concepts of research methodology and writing thesis and research papers.
- Develop good learning, communication and teaching skills.
- Demonstrate communicative skills explaining management, prognosis providing counseling and health education to the patient
- Acquire in-depth knowledge in the subject including recent advances.
- Fully conversant with the bedside procedures and have knowledge of latest diagnostics & the rapeutics available.
- Manage ENT emergencies
- Demonstrate empathy and humane approach towards the patient and their family and respect their emotions

---

## II. TEACHING AND TRAINING ACTIVITIES:

The fundamental components of the teaching programme should include:

1. Case presentations & discussion- once a week
2. Seminar – Once a week
3. Journal club- Once a week
4. Grand round presentation (by rotation departments and subspecialties)- once a week
5. Faculty lecture teaching- once a month
6. Clinical Audit-Once a Month
7. A poster and have one oral presentation at least once during their training period in a recognized conference.

The rounds should include bedside sessions, file rounds & documentation of case history and examination, progress notes, round discussions, investigations and management plan) interesting and difficult case unit discussions.

The training program would focus on knowledge, skills and attitudes (behavior), all essential components of education. It is being divided into theoretical, clinical and practical in all aspects of the delivery of the rehabilitative care, including methodology of research and teaching.

- i. **Theoretical:** The theoretical knowledge would be imparted to the candidates through discussions, journal clubs, symposia and seminars. The students are exposed to recent advances through discussions in journal clubs. These are considered necessary in view of an inadequate exposure to the subject in the undergraduate curriculum.
- ii. **Symposia:** Trainees would be required to present a minimum of 20 topics based on the curriculum in a period of three years to the combined class of teachers and students. A free discussion would be encouraged in these symposia. The topics of the symposia would be given to the trainees with the dates for presentation.
- iii. **Clinical:** The trainee would be attached to a faculty member to be able to pick up methods of history taking, examination, prescription writing and management in rehabilitation practice.

- 
- iv. **Bedside:** The trainee would work up cases, learn management of cases by discussion with faculty of the department.
- v. **Journal Clubs:** This would be a weekly academic exercise. A list of suggested Journals is given towards the end of this document. The candidate would summarize and discuss the scientific article critically. A faculty member will suggest the article and moderate the discussion, with participation by other faculty members and resident doctors. The contributions made by the article in furtherance of the scientific knowledge and limitations, if any, will be highlighted.
- vi. **Research:** The student would carry out the research project and write a thesis/ dissertation in accordance with NBE guidelines. He/ she would also be given exposure to partake in the research projects going on in the departments to learn their planning, methodology and execution so as to learn various aspects of research.

### III. SYLLABUS:

- Molecular biology
- Genetics
- Gene therapy
- Mechanisms of anti cancer drugs
- Radiotherapy and radio sensitizers
- Apoptosis and cell death
- Stem cells
- Soft and hard tissue repair
- Skin flap physiology
- Biomaterials, tissue engineering and their applications
- Immunology- Defense mechanisms
- Allergy: basic mechanisms and tests
- Evaluation of the immune system
- Primary immune deficiencies
- Rheumatological diseases
- Microorganisms
- Viruses and anti viral agents
- Fungi
- Anti microbial therapy
- HIV and otolaryngology
- Blood groups, blood components and alternatives to transfusion

- 
- Haemato-oncology
  - Haemostasis: normal physiology, disorders of haemostasis and thrombosis and their management
  - The pituitary gland: anatomy, physiology, imaging and tests of function
  - The thyroid gland: anatomy, physiology, tests of function and imaging
  - The thyroid: non malignant disease
  - The parathyroid glands: anatomy, physiology, tests of function and imaging  
Parathyroid dysfunction: medical and surgical therapy
  - Head and neck manifestations of endocrine disease
  - ENT Manifestations of Endocrine diseases
  - Drug administration and monitoring
  - Corticosteroids in otolaryngology
  - Drug therapy in otology
  - Drug therapy in rhinology
  - Drug therapy in laryngology and head and neck surgery
  - Preparation of the patient for surgery
  - Recognition and management of the difficult airway
  - Adult anaesthesia
  - Paediatric anaesthesia
  - Adult critical care
  - Paediatric intensive care
  - General Consideration of Anesthesia and Management of the Difficult airway
  - Surgical management of the difficult adult airways
  - Tracheostomy
  - Overview of Diagnostic Imaging of the Head and Neck
  - Pharyngitis in Adults
  - Deep Neck and Odontogenic Infections
  - Head and Neck Manifestations in the Immuno compromised Host
  - Nasal Manifestations of Systemic Disease
  - Laryngeal and Tracheal Manifestations of Systemic Diseases
  - Oral manifestations of Systemic Diseases
  - Autoimmune Inner Ear Diseases
  - Otolaryngology in the Elderly
  - Pain Management
  - Sleep Apnea and Sleep Disorders
  - Aesthetic Facial Analysis
  - Scar Revision, Keloide and Camouflage
  - Facial Trauma: Soft tissue Lacerations and Burns



- 
- Maxillo facial Trauma
  - Reconstruction of Facial Defects
  - Meatoplasty
  - Otoplasty
  - Nasal Septum
  - Nasal Fractures
  - Rhinoplasty
  - Special Rhinoplasty Techniques
  - Allergy and Immunology of the Upper airways
  - Physiology of Olfaction
  - Objective Assessment of Nasal Function
  - Radiology of the Nasal Cavity and Paranasal Sinuses
  - Epistaxis
  - Non-allergic Rhinitis
  - Fungal Rhinosinusitis
  - Benign Tumors of the Sinonasal Tract
  - Primary Sinus Surgery
  - Revision surgery for Rhinosinusitis, causes for failure and management of complications of endoscopic sinus surgery
  - Management of the Frontalsinus
  - Cerebrospinal Fluid Rhinorrhea
  - Endoscopic Dacryocystorhinostomy
  - Laryngeal and Pharyngeal Function
  - Visualization of the Larynx
  - Voice Evaluation and therapy
  - Neurological evaluation of the Larynx and Pharynx
  - Neurological Disorders of the Larynx
  - The Professional Voice
  - LASER Surgery: Basic Principles and safety considerations
  - Benign Vocal Fold Mucosal Disorders
  - Acute and Chronic Laryngitis
  - Medialization Thyroplasty
  - Arytenoid Adduction and Abduction
  - Laryngeal Reinnervation
  - Chronic Aspiration
  - Laryngeal and Esophageal Trauma
  - Surgical Management of Upper Airway Stenosis
  - Diseases of Esophagus

- 
- Transnasal Esophagoscopy
  - Zenker Diverticulum
  - Tracheobronchial Endoscopy
  - Human Papillomavirus and Epidemiology of Head and Neck Cancer
  - Chemotherapy and Targeted Biological Agents for Head and Neck Squamous cell Carcinoma
  - Integration of Palliative and Curative Care Strategies
  - Management of Cutaneous Head and Neck Melanoma
  - Malignancies of the Paranasal Sinus
  - Physiology of the Salivary glands
  - Diagnostic Imaging and Fine Needle Aspiration of the Salivary glands
  - Inflammatory Disorders of the Salivary glands
  - Benign Neoplasm of the salivary glands
  - Malignant Neoplasm of the salivary glands
  - Physiology of the Oralcavity
  - Oral Mucosallesions
  - Odontogenesis, odontogenic cysts and Odontogenic Tumors
  - Temporomandibular Joint Disorders
  - Benign Tumors and Tumorlike Lesions of the Oralcavity
  - Malignant Neoplasms of the Oralcavity
  - Reconstruction of the Mandible
  - Prosthetic management of Head and Neck Defects
  - Tumors of the Nasopharynx
  - Malignant Neoplasm of the Oropharynx
  - Transoral Approaches to Malignant tumors of the Nasopharynx
  - Reconstruction of Oropharynx
  - Mechanism of Normal and Abnormal Swallowing
  - Diagnostic Imaging of the pharynx and esophagus
  - Neoplasm of the Hypopharynx and cervical Esophagus
  - Radiotherapy and Chemotherapy of Squamous cell Carcinoma of the Hypopharynx and Esophagus
  - Reconstruction of the Hypopharynx and Esophagus
  - Diagnostic Imaging of the larynx
  - Malignant tumors of the larynx
  - Management of Early Glottic Cancer
  - Transoral LASER Microsection of Advanced laryngeal tumors
  - Conservation laryngeal surgery
  - Total larynxectomy and laryngopharyngectomy

- 
- Radiation therapy for cancer of the larynx and hypopharynx
  - Vocal and speech rehabilitation after laryngectomy
  - Diagnosis and management of tracheal neoplasms
  - Differential diagnosis of Neck masses
  - Revision Rhinoplasty
  - Allergy and Immunology of the Upper airway
  - Physiology of Olfaction
  - Objective Assessment of Nasal Function
  - Radiology of the Nasal cavity and Paranasal Sinuses
  - Epistaxis
  - Non allergic Rhinitis
  - Fungal Rhinosinusitis
  - Training, accreditation and the maintenance of skills
  - Communication and the medical consultation
  - Clinical governance: Improving the quality of patient care
  - Medical ethics
  - Medical jurisprudence and otorhinolaryngology
  - Epidemiology
  - Outcomes research
  - Evidence-based medicine
  - Critical appraisal skills
  - Recent Advances in Technology
  - Functional magnetic resonance imaging: Principles and illustrative applications for otolaryngology
  - Positron emission tomography and integrated PET/computed tomography
  - Image-guided surgery, 3D planning and reconstruction
  - Ultrasound in ear, nose and throat practice
  - Interventional techniques
  - Laser principles in otolaryngology, head and neck surgery
  - Electrophysiology and monitoring
  - Optical coherence tomography
  - Contact endoscopy
  - Pediatric ENT-Introduction
  - The paediatric consultation
  - ENT input for children with special needs
  - Head and neck embryology
  - Molecular otology, development of the auditory system and recent advances in genetic manipulation

- 
- Hearing loss in preschool children: screening and surveillance
  - Hearing tests in children
  - Investigation and management of the deaf child
  - Paediatric cochlear implantation
  - Congenital middle ear abnormalities in children
  - Otitis media with effusion
  - Acute otitis media in children
  - Chronic otitis media in childhood
  - Management of congenital deformities of the external and middle ear
  - Disorders of speech and language in paediatric otolaryngology
  - Cleft lip and palate
  - Craniofacial anomalies: genetics and management
  - Vertigo in children
  - Facial paralysis in childhood
  - Epistaxis in children
  - Nasal obstruction in children
  - Paediatric rhinosinusitis
  - The adenoid and adenoidectomy
  - Obstructive sleep apnoea in childhood
  - Stridor
  - Acute laryngeal infections
  - Congenital disorders of the larynx, trachea and bronchi
  - Laryngeal stenosis
  - Paediatric voice disorders
  - Juvenile-onset recurrent respiratory papillomatosis
  - Foreign bodies in the ear and the aerodigestive tract in children
  - Tracheostomy and homecare
  - Cervicofacial infections in children
  - Diseases of the tonsil
  - Tonsillectomy
  - Salivary gland disorders in childhood
  - Tumours of the head and neck in childhood
  - Branchial arch fistulae, thyroglossal duct anomalies and lymphangioma
  - Gastro-oesophageal reflux and aspiration
  - Diseases of the oesophagus, swallowing disorders and caustic/acid ingestion
  - Imaging in paediatric ENT
  - Medical negligence in paediatric otolaryngology
  - Anatomy of the nose and paranasal sinuses

- 
- Nasal endoscopy
  - Physiology of the nose and paranasal sinuses
  - Measurement of the nasal airway
  - Classification and differential diagnosis of rhinosinusitis
  - Allergic rhinitis
  - Nonallergic perennial rhinitis
  - Occupational rhinitis
  - Food allergy and intolerance
  - Rhinosinusitis
  - Fungal rhinosinusitis
  - Specific chronic infections
  - Medical management of chronic rhinosinusitis
  - Surgical management of rhinosinusitis
  - The frontal sinus
  - Mucocoeles
  - Complications of rhinosinusitis
  - Nasal polyposis
  - The relationship between the upper and lower respiratory tract
  - The septum
  - Nasal septal perforations
  - The management of hypertrophied turbinates
  - Epistaxis
  - Nasal fractures
  - Fractures of the facial skeleton
  - Cerebrospinal fluid rhinorrhoea
  - Granulomatous conditions of the nose
  - Abnormalities of smell
  - Orbital and optic nerve decompression
  - Dacryocystorhinostomy
  - Conditions of the external nose
  - The diagnosis and management of facial pain
  - Medical negligence in rhinology
  - Surgical anatomy of the neck
  - Examination and imaging of the neck
  - Neck trauma
  - Benign neck disease: infections and swellings
  - Anatomy of the mouth and dentition
  - Benign oral and dental diseases

- 
- Abnormalities of taste
  - Salivary gland anatomy
  - Physiology of the salivary glands
  - Imaging of the salivary glands
  - Non-neoplastic salivary gland diseases
  - Cysts and tumours in and around the jaws, including sarcoma
  - Anatomy of the pharynx and oesophagus
  - Physiology of swallowing
  - Functional investigations of the upper gastrointestinal tract
  - Acute and chronic pharyngeal infection
  - Causes of dysphagia
  - Globus pharyngeus
  - Pharyngeal pouch
  - Oesophageal diseases
  - Neurological disease of the pharynx
  - Dysphagia: management and intervention
  - Management and treatment of intractable aspiration
  - Anatomy of the nasopharynx
  - Benign conditions of the nasopharynx
  - Anatomy of the larynx and tracheobronchial tree
  - Assessment and examination of the upper respiratory tract
  - Physiology of the larynx
  - Voice and speech production
  - Objective evaluation of the voice
  - Disorders of the voice
  - The professional voice
  - Speech therapy in ENT practice: scope, science and evidence for intervention
  - Phonosurgery
  - Acute infections of the larynx
  - Chronic laryngitis
  - Laryngeal trauma and stenosis
  - Introduction of Airway Obstruction
  - Recurrent Respiratory Papillomatosis
  - Upper airway obstruction
  - Tracheostomy
  - Physiology of sleep and sleep disorders
  - Obstructive sleep apnoea: medical management
  - The surgical management of snoring

- 
- Epidemiology of head and neck cancer
  - Aetiology of head and neck cancer
  - Staging of head and neck cancer
  - Data collection in head and neck cancer
  - Prognostic indicators and serummarkers
  - Skin cancer of the head and neck
  - Mucosal malignant melanoma
  - Nasal cavity and paranasal sinus malignancy
  - Juvenile angiofibroma
  - Nasopharyngeal carcinoma
  - Benign salivary gland tumours
  - Malignant tumours of the salivary glands
  - Tumours of the parapharyngealspace
  - Oral cavity tumours including the lip
  - Oropharyngealtumours
  - Tumours of the larynx
  - Rehabilitation after laryngectomy
  - Tumours of the hypopharynx and oesophagus
  - Thyroid cancer
  - Management of the patient presenting with neck lymphadenopathy and an unknown primary carcinoma
  - Metastatic neck disease
  - Developments in radiotherapy for head and neck cancer
  - Quality of life in head and neck cancer
  - Palliative care for head and neck cancer
  - Medical negligence in head and neck surgery
  - The history of reconstructive surgery of the head and neck
  - Grafts and local flaps in head and neck surgery
  - Pedicled flaps in head and neck surgery
  - Free flaps in head and neck reconstruction
  - Keloids, hypertrophic scars and scar revision
  - Principles of osseointegration and the role of prosthetics
  - A combined prosthetic and surgical approach to head and neck reconstruction
  - Aesthetics, facial proportions and digital planning in facial plastic surgery
  - Reduction rhinoplasty
  - External rhinoplasty
  - Augmentation rhinoplasty
  - Revision rhinoplasty

- 
- The deviated nose
  - The nasal tip and nasolabial angle
  - The nasal valve and its management
  - Nasal reconstruction
  - Total reconstruction of the pinna
  - Blepharoplasty
  - The ageing face
  - Facial reanimation
  - Medical negligence in facial plastic surgery
  - The anatomy and embryology of the external and middle ear
  - Form and ultra structure of the cochlea and its central connections
  - Anatomy and ultra structure of the vestibular organ
  - Sound vibrations and waves
  - Physiology of hearing
  - Physiology of equilibrium
  - The perception of sound
  - Psychoacoustic audiometry
  - Evoked physiological measurement of auditory sensitivity
  - Prevention of hearing loss: scientific principles
  - Clinical examination of the ears and hearing
  - Conditions of the pinna and external auditory canal
  - Furunculosis
  - Bullous myringitis
  - Granular myringitis
  - Benign necrotizing otitis externa
  - Malignant otitis externa
  - Keratosis obturans and primary auditory canal cholesteatoma
  - Acquired atresia of the external ear
  - Otitis externa and otomycosis
  - Perichondritis of the external ear
  - Relapsing perichondritis
  - Exostosis of the external auditory canal
  - Foreign bodies in the ear
  - Haematoma auris
  - Osteoradionecrosis of the temporal bone
  - Herpes zoster oticus
  - Conditions of the middle ear
  - Acute otitis media in adults



- 
- Otitis media with effusion in adults
  - Chronic otitis media
  - Tuberculosis of the temporal bone
  - Otosclerosis
  - Paget's disease
  - Ear trauma
  - Otagia
  - Conditions of the cochlea
  - Age-related sensorineural hearing impairment
  - Noise-induced hearing loss
  - Autosomal dominant non syndromic sensorineural hearing impairment
  - Ototoxicity
  - Idiopathic sudden sensorineural hearing loss
  - Tinnitus and other dysacusis
  - Management of hearing impairment
  - Hearing aids
  - Bone-anchored hearing aids
  - Cochlear implants
  - Middle ear implants
  - Accessory devices
  - Balance disorders
  - Pathology of the vestibular system
  - Evaluation of balance
  - Vertigo: Clinical syndromes
  - Vertigo: clinical management and rehabilitation
  - Medical negligence in otology
  - Retrocochlear and facial nerve disorders
  - Retrocochlear hearing disorders, including auditory dyssynchrony
  - Central auditory dysfunction
  - Disorders of the facial nerve and Rehabilitation
  - Anatomy of the skull base and infratemporal fossa
  - Clinical neuro anatomy
  - Evaluation of the skull base patient
  - Vascular assessment and management in skull base surgery
  - Natural history of vestibular schwannoma
  - Surgical management of vestibular schwannoma
  - Gamma knife stereotactic radio surgery
  - Patient with neurofibromatosis2

- 
- Management of non-acoustic cerebellopontine angle tumours
  - Middle fossa surgery
  - Jugular foramen lesions and their management
  - Petrous apex lesions
  - Approaches to the nasopharynx and Eustachian tube
  - Tumours of the temporal bone
  - Tumours of the facial nerve
  - Squamous cell carcinoma of the temporal bone
  - Pituitary tumours: medical and surgical management
  - Anterior and anterolateral skull base and cranio facial surgery
  - Complications of skull base surgery
  - Medical negligence in skull base surgery
  - Hearing loss in Elderly
  - Biomedical waste management
  - Biostatistics
  - Recent Advances in Technology

**Biostatistics, Research Methodology and Clinical Epidemiology Ethics**

**Medico legal aspects relevant to the discipline**

**Health Policy issues as may be applicable to the discipline**

#### **IV. COMPETENCIES:**

##### **SKILLS**

Describe embryology, physiology, pathology, clinical features, diagnostic procedures and the therapeutics including preventive methods, (medical/surgical) pertaining to Otorhinolaryngology - Head & Neck Surgery

Pharmacology of the drugs used in ENT, their pharmacokinetics adverse effect and pharmaco-vigilance

Clinical decision making ability & management expertise: Diagnose conditions from history taking clinical evaluation and investigations and develop expertise to manage medically as well as surgically the commonly encountered disorders and diseases in different areas

- 
- Otolology & Neurology: External, middle and internal ear diseases, deafness, facial nerve palsy, tinnitus, vertigo and tumours of the region and other related conditions
  - Rhinology: Nose and Paranasal sinus disorders and diseases. Acquire surgical skills to do septoplasty, septorhinoplasty, functional endoscopic sinus surgery (FESS) etc. Develop capability to do oncologic diagnosis and therapy planning for proper management of such patients in collaboration with radiotherapists and medical oncologists etc.
  - Laryngology: Able to diagnose and manage benign lesions of the larynx including voice-disorders, pharyngeal and nasopharyngeal diseases; Capable to do diagnosis of oncologic conditions such as laryngeal carcinoma and plan its therapy strategies etc.
  - Oral cavity and salivary glands: Learn about diseases of oral cavity, Parotid gland and Sub-mandibular gland, Minor Salivary gland diseases and their management etc.
  - Head/Neck conditions/diseases: Learn about head and neck tumors, diseases of thyroid gland, neurogenic tumours neck space infection sand their management etc.
  - Broncho-esophageal region: Learn about broncho-esophageal diseases/disorders such as congenital disorders, diagnosis of foreign bodies in wind/food pipes with their management policies. Capable to perform Panendoscopy for oncologic evaluation in the head-neck region, including esophageal malignancy etc.
  - Plastic reconstruction of congenital defects of head & neck region and acquired defects following major head neck surgery & trauma. Acquire general principles of reconstructive surgery and its referral needs and Recent Advances in ENT including surgical methods etc.
  - Traumatology & Facio-maxillary Injury: Acquire knowledge in the management of Traumatology in general and facio maxillary injury in particular, including nasal fractures.etc.
  - Speech Audiology and Rehabilitation: Be capable of identifying and diagnosis of audiological & speech related disorders. Perform different audiological and

---

neuro-otological tests for diagnosis of audiologic/vestibular disorders/diseases and capable to interpret these findings and to incorporate their implication in diagnosis and their treatment along with the rehabilitative methods in audiology and speech pathology including hearing aids and other assistive and implantable devices etc.

- Early diagnosis of malignancies and create its awareness in the community/society to eventually get better cooperation from people in health management etc.
- Psychological and social aspect: Some elementary knowledge in clinical Psychology and social work management to be acquired for management of patients, especially those terminally ill and disabled persons and interacting with their relatives etc.
- Radiology in ENT: Acquire knowledge about radiology/imaging and to interpret different radiological procedures and imaging in Otolaryngology- Head and Neck including skull base region. There should be collaboration with Radiology department for such activities etc.
- Pediatric Otorhinolaryngology: Diseases of Ear, Nose, Throat in children including Bronchoesophagology, foreign body etc.
- Allergy, Immunology and Autoimmunity in relation to ENT
- Knowledge of LASER and fibroptics
- Principle of cancer immunotherapy and immune modulation Knowledge of Chemotherapy and Radiotherapy in ENT and head and neck tumors along with radiotherapy, chemotherapy and immune modulation
- Principle of Radiotherapy and its application in ENT, Head and Neck Neoplasia
- Principle of Nuclear medicine in relation to ENT
- Endocrinal disorders related to ENT
- Role of Genetics and gene therapy in ENT Disorders

- 
- Hematology in relation to ENT
  - Should have knowledge of ENT disorders in Geriatrics including Deafness due to aging and its management.
  - Principles of Jurisprudence and Ethical issues related to ENT
  - Basic knowledge of anesthesia related to ENT
  - Knowledge of devices and prosthesis in ENT
  - Should have basic knowledge and principle of general surgical skills, suture material used in surgery, sterilization technique, wound healing, Shock and Fluid management etc.
  - Should have knowledge of blood transfusion and adverse reaction and its management.
  - Should have knowledge of relevant simulators to acquire diagnostics and management skills.
  - Research: Develop ability to conduct a research enquiry on clinical materials available in Hospital and in the community.
  - Patient doctor relation: Develop ability to communicate effectively with the patient and his/her relatives pertaining to the disease condition, its severity, prognosis and options available for the treatment/therapy.
  - Preventive Aspect: Acquire knowledge about prevention of relevant conditions such as middle ear and sinus infection, and others hereditary deafness and early diagnosis of head-neck malignancy etc. Hence, resident should know about the preventive Otorhinolaryngology(ENT)
  - Presentation of Seminar/paper: Should develop public speaking ability and should be able to make presentation on disease-conditions/research topics to fellow colleagues in a Seminar/meeting/conference using audio visual aids.
  - Research paper writing: should be capable to write case-reports and research papers for publication in scientific journals.

- 
- Team work: To develop Team spirit in patient management, working together in OPD, OT, ward and sharing responsibility with colleagues such as doctor, nurses and other staff.
  - Teaching of Under-Graduate, Paramedical and other Staff of hospital / institutions.

## PRACTICAL SKILLS

- History taking
- Anterior and posterior Rhinoscopy
- Oral cavity examination
- Otoscopy
- Neuro-Otologytesting
- Indirect Laryngoscopy
- Tuning fork testing
- Audiometry, impedance Audiometry and Examination of Eustachian tube
- Functional examination of the nose
- Transillumination test
- Nasal endoscopy
- Examination of ear under microscope
- Neck Examination
- Examination of the cranial nerves
- Flexible fibro-optic laryngoscopy
- Examination of cervical, lymph nodes and Thyroid
- Others

## MONITORING SKILLS

- Temperature recording
- Capillary blood sampling
- Arterial blood sampling
- Cardio respiratory monitoring
- Post operative monitoring and management
- Tracheostomy care
- Blood gasanalysis
- Air way management

- 
- Others

## THE THERAPEUTIC SKILLS

- Tracheostomy & Airway management
- Anterior/ posterior nasal packing
- Ear Packing and Syringing
- Foreign body removal from ear, nose and throat
- Nasogastric feeding
- Endo tracheal intubation
- Cardio pulmonary resuscitation
- Administration of oxygen
- Mini puncture and establishment of vascular access
- Administration of fluids, blood, blood components and parenteral nutrition
- Common dressing
- Abscess drainage
- Basic principles of Rehabilitation

## DIAGNOSTIC SKILLS

- Interpretation of X-rays/CT/MRI of Head, nose and paranasal sinuses, ear, neck & chest
- Understanding of Audiograms, ENG, BERA, ultra-sonographic abnormalities and other diagnostic procedures

## SURGICAL SKILLS

### **Basic surgical skills**

- General layout and working of the OT
- Scrubbing, gowning and gloving
- Scrubbing sterilization of the OT instruments
- Shifting of patients
- Pre operative workup of the patient and surgical planning
- Understand rationale of surgery

- 
- Post operative care

### **Surgical Procedure to be assisted or Performed under Supervision**

- Tracheostomy
- Tonsillectomy
- Adenoidectomy
- Myringotomy & Grommetinsertion
- Nasal Polypectomy
- Sub-mandibular salivary gland excision
- Incision/drainage of quinsy/other abscesses
- S.M.R. &Septoplasty
- Cortical mastoidectomy
- Modified radical Mastoidectomy.
- Be able to manage common emergencies like, fracture of nasal bone, stridor requiring a tracheostomy, epistaxis, Mastoid abscess Peritonsillar abscess and others
- Myringoplasty/Tympanoplasty
- Nasal biopsy
- Biopsy from a neck mass, such as anode
- Direct Laryngoscopy & biopsy
- Nasopharyngoscopy & biopsy
- Flexible Bronchoscopy, Oesophagoscopy – Foreign body removal & biopsy
- Aural polypectomy
- Endoscopy examinations
- Inter anasalethmoidectomy
- External ethmoidectomy
- External front oethmoidectomy
- Maxillectomy (Partial and Total)
- Excision of thyroglossal cyst
- Superficial Parotidectomy
- Radical block dissection of the neck for metastatic nodes.
- Total Laryngectomy for cancer
- Laryngofissure
- Repair of laryngotracheal trauma
- Ligation of external carotid artery
- Others



---

**Procedure to observe:**

- Facial nerve decompression
- Pinna-Repair (Post-traumatic)
- Surgery of choanalatresia,
- External canalatresia-surgery
- Functional endoscopic/sinus surgery
- Stapedectomy
- Rhinoplasty for cosmetic purposes
- Tympanoplasty with mastoid surgery Fibre-optic bronchoscopy and oesophagoscopy including foreign body removal
- Cryo/LASER surgery in ENT
- Micor laryngoscopic voice-surgery for vocal nodules, polyps/ cyst etc
- Phono surgery for cord palsy including type I thyroplasty.
- Skull base/parapharyngeal space surgery
- Thyroid surgery,
- Laryngo-tracheal stenosis – surgical correction,
- Facio maxillary injury etc.

**Research methodology/Reporting on research**

- Learns the basics in research methodology
- Problem oriented record keeping including use of computer
- Use of Medical literature search including through Internet and Library
- Attends bio-statistics classes by arrangement

**Research Report**

- Writing including preparation of Protocol for Research/Thesis.
- Writing an abstract/short paper/presentation style (Slide-making audio visual aids).
- Preparation of a report on a Research project and Thesis.

**Humanity/Ethics:**

- Lectures on humanity including personality development, team spirit and ethical issues in patient care and human relationship including, public relations,

---

by Psychologist and public relation officers are to be arranged by the dept./college.

## TEACHING METHODS

The following learning methods may be used for the teaching of the DNB trainees:

- Journal clubs
- Seminars
- Lecture/discussions: Lectures on newer topics by Faculty
- Case presentation in the ward and Special clinics (such as vertigo / otology and Tumor clinics) DNB Student will present a clinical case for discussion before a faculty and discussion made pertaining to its management and decision to be recorded in case files.
- Surgico-pathological Conference
- Combined Round/Grand Round
- Clinical teaching in OPD, Emergency, ICU, Operation Theatre and others
- Community camps: For rural exposure and also for experience in preventive aspect in Rural situation/hospital and school. Patient care camps are to be arranged during 2-3 years, involving Candidates/Faculty.
- Emergency situation: Casualty duty to be arranged by rotation among the Trainees with a Faculty cover daily by rotation.
- Special Clinics: DNB Student should attend special clinics like Vertigo clinic, Tumor Clinic/Head and neck cancer clinic, Rhinology clinic, otology clinics and others if available in the institute
- Death Reviews and Medical Audit
- It is recommended that the DNB trainee to be adequately exposed to Cadaveric dissection for learning surgical anatomy, different Surgical procedure, microscopic procedure, and endoscopic surgery
- Simulators dissection Lab: If the cadaveric dissection facility is not available then student should be exposed to Surgical Simulator labs

### Note

- All sessions are to be attended by the faculty members. All trainees are supposed to attend the sessions except the ones posted in emergency.
- All the teaching sessions are assessed by the Faculty at the end of session and marks are given out of 10 and kept in the office for internal assessment.
- Attendance of the Trainees at various sessions has to be at least 75%.

**DETAILS OF THE SKILLS TO BE ACQUIRED DURING THE TRAINING PERIOD**

**Clinical procedures which the candidates must know**

Name of procedure	Number of Procedures		
	As Observer	As First assistant	Under Supervision
Tracheostomy	5	5	5
Tonsillectomy	10	10	10
Adenoidectomy	10	10	10
Incision Drainage Quinsy/other abscesses	2	2	10
Biopsy from neck mass & Lymph node	2	2	10
Direct Laryngoscopy	2	2	20
Submandibular duct stone removal	1	1	1
Total Laryngectomy	2	-	-
Radical Neck dissection	2	-	-
Nasopharyngeal Angiofibroma	1	-	-
Ligation External Carotid Artery	2	1	-
Micro-laryngeal Surgery	3	3	3
Parapharyngeal space surgery	2	1	-
Thyroid Surgery	2	1	-
Pre auricular sinus excision	2	2	2
Cortical Mastoidectomy/Modified radical mastoidectomy	5	5	5
Myringotomy	5	-	5
Aural Polypectomy	2	2	5
Branchial Sinus/Thyroglossal /cyst	2	2	2
Facial Nerve decompression	1	-	-
Stapedectomy	5	-	-
Myringoplasty/Tympanoplasty	5	5	10
Nasal Polypectomy	5	5	5
SMR/Septoplasty	5	5	10
External Frontoethmoidectomy	1	-	-
Functional Endoscopic Sims surgery	5	5	-
Maxillectomy	1	-	-
Rhinoplasty	10	10	-
Lobuloplasty	5	5	10
Fracture Nasal bone	5	5	5

---

### Investigations/tests which the candidates must know to interpret

Name of Investigations/tests
Pure tone audio metery and associated special tests
Impedance audio metery and Acoustic reflex
Caloric test
BERA / ASSR
Nerve Conduction Tests
Oto-acoustic emissions
ECG
Haematological Investigations including Haemogram, LFT, KFT, etc
Radiological – X-rays mastoid, PNS & neck CT scans – Temporal bone, neck, DNS, MRI – Head & Neck
Polysomnography

## V. LOG BOOK

A candidate shall maintain a log book of operations (assisted / performed) during the training period, certified by the concerned post graduate teacher / Head of the department / senior consultant.

This log book shall be made available to the board of examiners for their perusal at the time of the final examination.

The log book should show evidence that the before mentioned subjects were covered (with dates and the name of teacher(s)) The candidate will maintain the record of all academic activities undertaken by him/her in log book.

1. Personal profile of the candidate
2. Educational qualification/Professional data
3. Record of case histories
4. Procedures learnt
5. Record of case Demonstration/Presentations
6. Every candidate, at the time of practical examination, will be required to produce performance record (log book) containing details of the work done by him/her during the entire period of training as per requirements of the log book. It should

---

be duly certified by the supervisor as work done by the candidate and countersigned by the administrative Head of the Institution.

7. In the absence of production of log book, the result will not be declared.

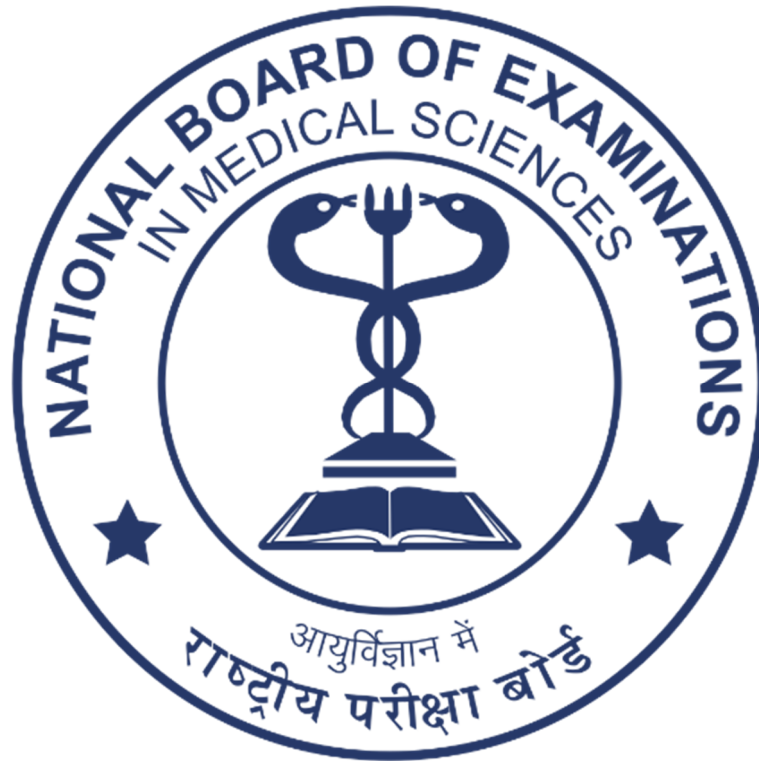
## VI. RECOMMENDED TEXT BOOKS AND JOURNALS

### Books Recommended

- Logan Turner Diseases of Ear Nose Throat
- Otolaryngology, Otology & Neurotology by Paparella & Micheal
- Essentials of endoscopic sinus surgery by SS tamberger
- Color Atlas of Head & Neck Surgery by Jatin PShah
- Scott Brown's Diseases of Ear Nose and Throat
- Surgery of the Ear – Glasscock and Shambaugh
- Otolaryngology, Head and Neck by Cummings
- Audiology by Katz
- Head and Neck Surgery by P M Stell and Maran
- Basic & Advances Biostatistics – Manju Pandey
- Oxford Handbook of Medical Biostatistics

### List of Journals

- Indian Journal of Otolaryngology and Head Neck Surgery
- Asian Journal of Ear Nose and Throat
- Ear, Nose and Throat Journal
- Indian Journal of Otology
- Journal of Laryngology and Otology
- Otolaryngologic clinics of North America
- Int. J. of Pediatric Otolaryngology
- Laryngoscope
- Annals of Otolaryngology
- Otolaryngology Head Neck Surgery
- Archives of Otolaryngology



आयुर्विज्ञान में राष्ट्रीय परीक्षा बोर्ड  
स्वास्थ्य एवं परिवार कल्याण मंत्रालय, भारत सरकार  
मेडिकल एन्क्लेव, अंसारी नगर, नई दिल्ली – 110029

**NATIONAL BOARD OF EXAMINATIONS IN MEDICAL SCIENCES**  
Ministry of Health & Family Welfare, Govt. of India  
Medical Enclave, Ansari Nagar, New Delhi- 110029