College of Physicians and Surgeons of Mumbai

Syllabus for CPS-PG-Course

DORL-DIPLOMA IN OTO-RHINO-LARYNGOLOGY (ENT)

College of Physicians and Surgeons of Mumbai

CPS House, Dr. E. Borges Marg, Parel, Mumbai – 400012.

DORL-DIPLOMA IN OTO-RHINO-LARYNGOLOGY (ENT)

COURSE DESCRIPTION

Eligibility: A candidate should possess MBBS degree/ equivalent degree as per provisions of Indian Medical Council Act.

Duration: 2 Years

SUBJECT SPECIFIC LEARNING OBJECTIVES

At the end of Diploma training, the student should be able to:

1. Acquire adequate knowledge about basic sciences in relation to Otorhinolaryngology
2. Acquire adequate knowledge to practice oto-rhino-laryngology efficiently.
3. Diagnose common diseases in Otorhinolaryngology.
4. Manage and treat common diseases in Otorhinolaryngology.
5. Acquire sufficient skills required for surgical interventions.
6. Implement National Health Programs

A. Cognitive Domain

At the end of training, the course student should have acquired knowledge in relation to

1. Anatomy and physiology of ear, nose and throat, trachea and esophagus.
2. Radiological anatomy of ear, nose and throat, trachea and esophagus.
3. Embryology and organogenesis inrelation to ear, nose and throat.
4. The generation and reception of speech .
5. Common microbes in relation to Otorhinolaryngology.
6. Haematology in relation to Otolaryngology
7. Pharmacology of drugs used in ENT
8. Electrolyte, fluid balance/shock
9. Routine laboratory tests and their interpretation

10. Facial nerve stimulation test
11. Audiometric tests like pure tone Audiometry, Impedance Audiometry
12. Evoked response audiometry and otoacoustic emissions
13. Allergy and rhinitis

Ear:

1. Anatomy of external, middle and inner ear
2. Embryology of ear, congenital anomolies
3. The physical and functional examination of the ear
4. The functional and physical examination of the vestibular system
5. Tinnitus
6. Affections of external ear
7. Traumatic conductive deafness
8. Acute inflammation of the middle ear cleft
9. Non-suppurative otitis media
10. Chronic suppurative otitis media
11. Management of chronic suppurative otitis media
12. Complications of infections of middle ear
13. Diseases of the otic capsule – otosclerosis
14. The deaf child
15. Ototoxicity
16. Presbycusis
17. Diagnosis and management of sudden and fluctuant sensorineural hearing loss
18. Meniere's disease
19. Neurologic aspects of vertigo
20. Facial paralysis
21. Rehabilitation of adults with acquired Hearing loss-Hearing aids

Nose:

1. Examination of the nose

2. Conditions of the external nose
3. Injuries of the facial skeleton
4. The nasal septum
5. Foreign bodies in the nose, rhinolith
6. Epistaxis
7. Acute chronic inflammations of the nasal cavities
8. Vasomotor rhinitis - allergic and non-allergic
9. Nasal polyposis
10. Acute sinusitis
11. Chronic sinusitis
12. Nasal allergy/fungal allergic sinusitis
13. Complications of acute and chronic sinusitis
14. Tumors of nose and sinuses
15. Functional endoscopic sinus surgery (FESS)

Throat:

1. Methods of examination of the mouth and pharynx
2. Diseases of the mouth
3. Diseases of the salivary glands
4. Pharyngeal lesions associated with general diseases
5. Diseases of the tonsils and adenoids (excluding neoplasms)
6. Oesophageal conditions in the practice of ear, nose and throat surgery
7. Methods of examining and larynx and tracheobronchial tree
8. Congenital diseases of the larynx
9. Laryngeal disorders in singers and other voice users
10. Intubation of the larynx, laryngotomy and tracheostomy
11. Lower respiratory conditions in Otolaryngology
12. Micro laryngeal surgery

Miscellaneous (head and neck):

a) Functional anatomy of cerebellum and brainstem

Cranial nerves

Raised intracranial tension - causes, diagnosis, management with particular reference to otitis hydrocephalus Head injuries and I.C. Haemorrhage

b) Osteology:

Skull, mandible cervical and thoracic vertebral sternum

Cervical fascia, facial spaces in neck, retro-pharyngeal and parapharyngeal abscesses .

Anatomy and physiology of thyroid gland, goitre, diseases of the thyroid and carcinoma of thyroid

General:

1. Physiology of circulation, regulation of blood pressure, reactions of body to haemorrhage, pathophysiology of shock, fluid balance, blood transfusion and its hazards, fluid replacement therapy, burns.
2. Drugs used in Otorhinolaryngology:
3. Antihistaminics
4. Nasal vaso-constrictors
5. Local anaesthetics
6. Corticosteroids
7. Cytotoxic agents
8. Antibiotics
9. Radioactive isotopes
10. Antifungal agents

Nice to know (desirable)

1. The ears and nasal sinuses in the aerospace environment
2. Principles of chemotherapy in head and neck cancer
3. Free-field Audiometry, specialized tests of hearing including SISI (Short increment sensitivity index test), Tone decay, ABLB (Alternate Binaural loudness balance test), Speech discrimination score etc.

4. Vestibular tests like caloric testing (water and air) stepping test etc
5. Ear Repair of deformities of the external ear.
6. Congenital conditions of the middle ear cleft
7. Tumors of the middle ear cleft and temporal bone
8. Diseases of the otic capsule-other diseases
9. Traumatic lesions of the inner ear
10. Inflammatory lesions of the vestibular and auditory nerve
11. Acoustic neuroma
12. Vascular lesions of the inner ear
13. The cochlear Implants
14. Nystagmus
15. Basics of Skull base/Neurologic surgery

B. **Affective Domain:**

1. Should develop communication skills to interact effectively with patients, relatives and colleagues and other hospital staff.
2. Should always adopt ethical principles and practices
3. Should be able to work a member of a team for effective care delivery system
4. Should develop an attitude to contribute effectively in the improvement, maintenance of health care delivery system of the country and to contribute in improving the health indicators of our country in comparison with the other developed world.

C. **Psychomotor Domain**

By the end of the training, a student should be able to demonstrate his skills in:

1. Taking a good history and demonstrating good examination techniques.
2. Arrive at a logical working diagnosis, differential diagnosis after clinical examination and order appropriate investigations keeping in mind their relevance (need based) and thereby provide appropriate care that is ethical, compassionate, responsive and cost effective and in conformation with statutory rules.

3. Should be able to perform and demonstrate the practical skills in the field of ENT including the following:
4. Examination of the ear, nose and throat oral cavity examination
5. Clinico-physiological examination and evaluation of the audio-vestibulo neurological system
6. Examination of the larynx and the throat including flexible endoscopy, stroboscopy, voice analysis and the clinico-physiological examination of the speech
7. Examination of the otological and audiological system including Tuning fork testing, audiological evaluation, micro and otoendoscopy
8. Clinical and physiological evaluation of the nose and paranasal sinuses including nasal endoscopy and olfactory evaluation
9. Examination of the neck and its structures
10. Should demonstrate and perform various therapeutic skills related to thespeciality such as Tracheostomy
11. Anterior/ posterior nasal packing
12. Ear Packing and Synrunging
13. Foreign body removal from air nose and throat¬ Airway management including basic life support skills, Cardiopulmonary resuscitation, intubation, homeostasis maintenance, IV alimentation and fluid, electrolyte maintenance and principles of blood transfusion alimentation including Nasogastric feeding, gastrostomy
14. Wound suturing, dressings and care of the wounds
15. Basic principles of rehabilitation
16. common procedures like FNAC, biopsy, aspiration from serous cavities,¬ lumber puncture etc
17. Should understand principles of and interpret X-rays/CT/MRI, audiograms, ENG (Electronystagmography), BERA (Brain stem evoked response audiometry), OAE (otoacoustic emission testing), ultrasonographic abnormalities and other diagnostic procedures in relation to the speciality
18. Should have observed/performed under supervision the various surgical procedures in relation to the speciality

SYLLABUS

Anatomy: Embryogenesis of ear, nose and throat including palate, larynx, Oesophagus, trachea, lungs, tongue, salivary gland, Head, Neck & Skull base etc. Para-pharyngeal spaces in the neck including connective tissue barriers of larynx.

Anatomy of all cranial nerves with their functions:

Applied anatomy: of the skull bones, accessory sinus, external, middle and inner ears, nose, PNS, nasopharynx, meninges, brain, pharynx, larynx, trachea and bronchi, lungs, pleurae, esophagus and the mediastinum.

Physiology: Mechanism of perception of smell and taste, mechanism of breathing and voice production, deglutition and salivation. Functions of the nose and Para-nasal sinuses, Mechanism of cough and sneezing.

Physiology: of larynx, tracheobronchial tree & esophagus. Histology of mucous membranes, internal ear and other associated organs and structures, nose, Para Nasal Sinuses, Nasopharynx, Tracheo-Bronchial tree, Lymphoepithelial system. Mechanism of immune system/immunology and genetics.

Physics of sound, theories of hearing, mechanism of perception of sound, speech Production, Physiology of equilibrium.Physiology of brain in connection with hearing, speech, smell and phonation. Audiologic tests like audiometry, impedance, evoked potentials, Oto-Acoustic Emissions, Speechaudiometry

Clinical

- Clinical methodology as applied to Oto-rhino-laryngology and Head & Neck disease in adult & children and the accessory sinuses, diagnosis and surgical treatment of diseases of nose, throat and ear in adult and children. Prevention and treatment, infectious diseases of Otolaryngology and Head Neck region. Circulatory and nervous disturbances of the nose, throat and ear and their effects on other organs of the body. Deformities, injuries, sinus infections, polyps and the tumours of the nose and

paranasal sinuses. Examination of the ear, deafness and allied diseases, complications of diseases of the ear. Injuries, tumours, circulatory & neurological disturbances of the ear. Diagnosis and treatment of tinnitus and vertigo. Diagnosis and rehabilitation of the Hearing handicapped including, dispensing of hearing aid other vibro tactile aids.

- Examination of diseases of children in connection with throat and larynx. Neurological and vascular disturbances. Congenital and neonatal stridor.
- Pathology of various diseases of the larynx and throat, trachea-bronchial tree and their causative organisms.
- General principles of facio-maxillary traumatology (surgical knowledge and training) and also neck injury, plastic surgery as applicable to Otolaryngology.

Surgical

- Surgical pathology of Otolaryngology and Head Neck region.
- Basic knowledge of the anaesthesia as related to ENT.
- Indications and various techniques of direct laryngoscopy, nasal endoscopy, bronchoscopy and oesophagoscopy. (incl. micro-laryngoscopic procedures).
- Rhinoplasties, endoscopic sinus surgery, and anterior cranial fossa surgery.
- Phono-surgery
- General surgery, Head-Neck oncology, Medicine related to the ENT diseases Surgery of congenital deformities of nose, ear & trachea/ oesophagusetc.

Diagnostics

- Reading or radiograms, scans, audiograms, nystagmograms and tympanograms in connection with ENT diseases/disorders.
- Special apparatus for the diagnosis and treatment of the diseases of ear, nose and throat including audiometer, Brainstem Evoked Response Audiometry, Electro Nystagmo Graphy, Speech analyser etc.
- Radiology, Imaging & computed tomography, magnetic resonance imaging (MRI), interventional radiology and angiography related to ENT.
- Newer technique for Radiotherapy including, use of gamma knife for treatment of

intracranial tumours and other malignancy.

- Recent advances (procedures)
  1) Coablation
  2) Aesthetic Surgery (open and closed) for Ear (pinna reconstruction) and Nose.
  3) Cleft lip and palate repair (FCPS)
- Chemotherapy of Head & Neck cancer.
- Recent developments in diag., pathogenesis, treatments in ENT diseases.
- Knowledge of LASERS and fiber optics.

Other Topics:

- Other methods of managing Hearing loss.
- Implantable hearing aids. Cochlear implants.
- Etiology and Managements of sleep apnoea/snoring.
- Hypophysectomies and optic nerve decompressions.
- Immunotherapy and modalities of the gene therapy.
- Preventive otolaryngology
- General pathologic aspects as wound healing, Pathology and Pathogenesis of ENT diseases, Pharmacology, molecular biology, genetics, cytology, haematology, and immunology as applicable to otolaryngology.
- Basic computers, computer averaging of the biological signals and its applications in Otolaryngology & Otolaryngologic equipments.
- Audiologic and speech disorders and their management strategies.
- Principles of Jurisprudence & ethical issues as applicable to ENT surgeons.

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EXAMINATION PATTERN

Theory Examination:

PAPER I	**PAPER II**	**PAPER III**
All Basic Medical Sciences Related To Oto-Rhino-Laryngology And Their Relation To Systemic Diseases	Diseases Of Ear, Nose And Throat Larynx And Therapautics And Treatment	Diseases Of Ear, Nose And Throat And Larynx Their Surical Approach And Recent Advances
Section I	Section I	Section I
Q.1. 10 Marks Q.2. 10 Marks Q.3. 10 Marks Q.4. 10 Marks Q.5. 10 Marks **Total 50 Marks**	Q.1. 10 Marks Q.2. 10 Marks Q.3. 10 Marks Q.4. 10 Marks Q.5. 10 Marks **Total 50 Marks**	Q.1. 10 Marks Q.2. 10 Marks Q.3. 10 Marks Q.4. 10 Marks Q.5. 10 Marks **Total 50 Marks**
Section II	Section II	Section II
Q.6. 10 Marks Q.7. 10 Marks Q.8. 10 Marks Q.9. 10 Marks Q.10. 10 Marks **Total 50 Marks**	Q.6. 10 Marks Q.7. 10 Marks Q.8. 10 Marks Q.9. 10 Marks Q.10. 10 Marks **Total 50 Marks**	Q.6. 10 Marks Q.7. 10 Marks Q.8. 10 Marks Q.9. 10 Marks Q.10. 10 Marks **Total 50 Marks**
Section I + II = 100 Marks	Section I + II = 100 Marks	Section I + II = 100 Marks
Total Theory = 300 Marks, Passing = 150 (i.e. 50%) Marks in aggregate		

Practical Examination :		**Marks**
Paper - IV	Long Cases	100
Paper - V	Short Cases	100

Paper - VI	Slides-Pathological Specimens, Instruments	100
Total Marks	[Passing = 150 (i.e. 50%) Marks in aggregate]	300