

CURRICULUM

OBJECTIVES OF THE COURSE

The fellow at the end of the course should acquire the following:

The core objectives of this certified course are to train the candidates in all aspects of cochlear implant surgery.

- Updating knowledge on ear implants & related basic sciences
- Honing & fine-tuning clinical acumen & surgical skills
- Trouble-shooting & managing difficult scenarios
- Training in data collection & clinical audit for research publications

Audiology & Rehabilitation: understanding the underlying principle, procedure, purpose and information obtained from different audiological procedures. Interpret information with audiological and other investigations.

Have knowledge of recent development in hearing aid technology and implants technology with special reference to candidacy / assessment / counseling / rehabilitation.

Teaching: Acquire ability to teach Undergraduate and postgraduate students about the otology.

Research: Develop ability to conduct a research enquiry on clinical materials available in hospital and in the community. He/ she will be responsible for conducting audit of clinical practice in cochlear implant in the Department.

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 audiovisual aids.

Research writing: Should be able to write case-reports and research papers for publication in scientific journals with one paper in PubMed journal is mandatory.

Patient doctor relation: Develop ability to communicate with the patient and his/her relatives pertaining to the disease condition, its severity and options available for the treatment/therapy.

Team work: Team spirit in patient management, working together in OPD, OT, ward and sharing responsibility with colleagues such as doctors, nurses and other staff are essential. Fellow has to develop these attributes through different mechanism of interaction.

Radiology: should be able to read CT/MRI and plan management accordingly.

Hands on: 25 cochlear implants will be given to the fellow.

At the end of this fellow should be able to perform the cochlear implant surgery and manage complicated cases with ease.

He /She should be able to develop cochlear implant program in whole at his place of working.

COURSE FORMAT & TRAINING SCHEDULE:

The course is divided into 4 sessions,

Session 1: – Out-patient clinical exposure at the ENT department OPD, for working up of patients, who will need cochlear implant surgery. Also field work for newborn hearing screening and camps for disabled kids .

The out-patient training includes direct interaction with patients for arriving at a clinical diagnosis, learning pre- operative work up protocols including knowledge of interpretation of high-resolution temporal bone imaging & advanced objective audiological test battery which includes Otoacoustic Emissions, Brainstem Evoked Response Audiometry & Auditory Steady State Responses.

A detailed session is also dedicated to provide experience in pre-operative counseling of patients for various implants & explain the possible outcomes.

Session 2 Supervised microsurgical dissection on wet temporal bone specimens, in the temporal bone lab for learning implantation skills prior to exposure.

Focus is on training in the various techniques of cochlear implant surgery, with exposure to intra-operative electrophysiology. Per- operative management of the patient is an integral part of this session.

Session 3: – Exposure to post-operative audiological procedures like Switch-On, Mapping & programming the implanted devices. Training in different methods of auditory-verbal habilitation.

Session 4: -Hands on normal and abnormal cases till perfection.

LOGBOOK: - The fellow is expected to maintain a log book with serial record of his training experience including documentation of clinical cases which he has been involved with during the time of the program, and submit the logbook at the time of completion of the course exam to the University. Each candidate is required to document a minimum of 40 implant cases in detail in the logbook.

SPECIALISED KNOWLEDGE - the fellow will be expected to have in-depth knowledge in the following areas:

Unit I - Basic Sciences

- Embryology of the Auditory System
- Neurotology & skull base anatomy
- Micro-anatomy of the Cochlea & its neural connections
- Physiology of Auditory & Vestibular System
- Pathology & Immunology of the Ear • Bio-films in relation to Ear Implants
- Osseo-integration Principle
- Syndromic & Non-syndromic Hearing Loss
- Genetic & Hereditary factors in Hearing Loss
- Stem cells & growth factors in Hearing Restoration
- Asepsis & Anti-sepsis protocols in Implant
- Recent Advances & Future Directions in Implant Otology
- Early intervention

- Auditory neuroplasticity
- Principles of cochlear implant imaging

Unit II - Evaluation of the Auditory System

- Tests for Cochlear & Retro-cochlear function
- Radio-Imaging of the Auditory System
- Electrophysiological assessment of hearing
- Auditory Evoked Responses & Psychophysics
- Neurological assessment in relevance to Auditory System
- Advancements in Cochlear Implant Programming
- Auditory and Linguistic Outcomes in Pediatric Cochlear Implantation
- Auditory Outcomes in the Adult Population
- Therapeutic Approaches Following Cochlear Implantation
- Acoustic and Electric Speech Processing
- Music Perception

Unit III - Clinical Aspects of Cochlear Implant surgery

- Candidacy for Implantation with expanding criteria
- Current Protocols in Implantation
- Design & Structure of Implants – CI
- Surgical Principles in cochlear implant surgery
- Imaging in cochlear implants
- Surgical techniques
- Revision cochlear implantation
- Auditory brain stem implants
- Tinnitus and implants
- Otosclerosis and implants
- Complications in cochlear implant surgery
- Special considerations in cochlear implant surgery
- Subtotal petrosectomy
- Cochlear ossification
- Meningitis and implantation
- Otomastoiditis and implantation
- Facial nerve and implants
- Malformations

- Implantation in skull base lesion
- Bone conduction implants
- Hearing preservation concepts & techniques in implantation
- Antibiotics in surgical prophylaxis
- Recent Advances in Ear Implants
- Binaural Implantation & its benefits
- Hybrid Implants
- Pharmacotherapeutics used in Neurotology practice

Unit IV - Post Implantation Assessment

- Programming protocols & Mapping Technology
- Software Programs for assessing Implant function
- Behavioral Response Audiometry / Implant aided Audiometry
- Electrophysiological tests - Uses & limitations
- Speech Processing Strategies in Cochlear Implantation
- Auditory Verbal Habilitation
- Outcomes with Implantation
- Long term effects of Implantation
- Quality of life measurement
- Psycho-social factors influencing hearing development
- Challenges unique to the Indian Scenario.

According to the curriculum, there are 792 hrs of teaching in 6 months.

- 80 hrs online lectures (round the year webinar)
- 272 hrs in surgical operation theatre
- 160 hrs in house lectures
- Saturdays are for research and temporal dissections
- Paper presentation and publication is must .

Scheduled exam in the end to be certified as fellow in cochlear implant .

For any query, kindly email to fellowshipci2@gmail.com