



**FELLOWSHIP PROGRAMME IN
OTOLOGY /NEUROTOLOGY AND LATERAL SKULL BASE SURGERY
FELLOWSHIP**

(TWO-YEAR FELLOWSHIP)

**Department of Otorhinolaryngology
Medical Education Center
College of Medicine, King Saud University**

Riyadh, Saudi Arabia

King Saud University College of Medicine
King Abdulaziz University Hospital
ORL Department

Introduction

The College of Medicine of King Saud University is situated in Riyadh, the capital city of Kingdom of Saudi Arabia. For many decades, it has been offering many post graduates training programs in various fields of specialties including the Otorhinolaryngology, Head and Neck Surgery.

Name of the Program

The Division of Otology/Neurotology at ENT department & **King Abdullah Ear Specialty Center (KAESC)** established the Otology/Neurotology Fellowship program in order to offer a high quality training of two years duration aiming at producing highly qualified and well trained fellows in this field.

Recently, six new otologists who have been trained in different international schools have joined the fellowship program. They nourished our training program with a wide range of varieties of valuable experiences. This resulted in expanding our field into more subspecialties which make our program more efficient in dealing with almost all the otological/neuro-otological and lateral skull base surgery cases.

Objective

This two-year program is designed to develop special expertise in the diagnosis and management of almost all diseases and disorders related to Otology/Neurotology. This include the auditory and vestibular systems, the facial nerve as well as lesions of the temporal bone and skull base including cerebellopontine angle and lateral skull base.

Admission requirements / Prerequisites / Selection Criteria

To be admitted to Otology/Neurotology subspecialty program, Candidate must:

1. Be a graduate of an approved school of medicine.
2. Be a board eligible/board certified otolaryngologist.
3. Provide a letter of release and sponsorship as a full-time fellow for the whole duration of the training.
4. Successfully complete the admission exam and/or the interview.
5. Provide two reference letters from consultants with whom the candidate is currently working or has recently worked with for a minimum period of six months.

GOALS AND OBJECTIVES OF THE TRAINING PROGRAM

General Guidelines

1. The duration of the sub-specialty training program is two years.
2. The fellow will be under the close supervision of the Otology/Neurotology group.
3. The start date of the fellowship program is the **1st working day of January each** year.
Submission of application is from proceeding **1st July to September**
4. The selection exam and/or the interview are held in the period between first of October to the end of December

General Objectives:

Otologist and Neurotologist must possess a sound knowledge in the general principles of medicine and surgery. During the course of training, the fellow will acquire satisfactory knowledge of the principles common to all ear surgical practice. Otology and Neurotology embraces some components of neurology, neurosurgery, pathology, **radio-oncology, audio vestibular & aural rehabilitation** and other specialties. The candidate must have sufficient knowledge in these fields as it relates to the specialty.

During the course of training, the fellow must develop clinical competence and detailed knowledge of the scientific rationale for the medical and surgical management of ear disorders in patients of all ages. In addition, the fellow should be able to develop special expertise in the diagnosis and medical/surgical management of diseases and disorders related to disciplines within Otolaryngology/Neurotology such as: auditory system, vestibular system, facial nerve, temporal bones and related skull base structures, tumors, and other lesions of the cerebellopontine angle and lateral skull base.

The fellows must demonstrate the knowledge, skills, and attitudes relating to gender, culture, and ethnicity pertinent to otolaryngology. In addition, they must demonstrate the ability to incorporate these matters in research methodology, data presentation, and analysis.

Upon successful completion of the educational program, the graduate physicians will be capable to function as a consultant Otolaryngologist and Neurotologist.

Program Certification:

The fellowship is an accredited program by the department of Otorhinolaryngology Head and Neck Surgery at College of Medicine, King Saud University.

Resources and facilities

King Abdul-Aziz University Hospital (KAUH) is a tertiary care academic hospital attached to the College of Medicine, King Saud University, Riyadh. It is located in the central area of Riyadh. The university hospital specializes in ORL H and N surgery and ophthalmology with a capacity of 104 in-patient beds. The total annual ambulatory visits to all departments are approximately 305340, and these include 101705 emergency visits. There are about 300881 visits to the ENT clinic each year. The surgical case load is approximately 4459 surgeries/year (approximately 25% are otology and Neurotology related). All procedures are performed in the main OR in KAUH with 3 rooms being in use each day. Moreover, some Neurotology and lateral skull base cases are performed at King Khalid University Hospital (KKUH). **In addition, the training program include external rotation at King Fahad Medical City (KFMC) and Prince Sultan Military Medical City (PSMMC)**

1. Teaching staff

At present, the physician staff consists of **nine**, committed, full time Otologists with massive experience in teaching and training in the Otology/Neurotology subspecialty aside from the collaboration with the Otologist/Neurotologist in the affiliated hospital(s) of the fellowship.

2. Equipment

The ORL department at KAUH is a highly equipped center. All examination and operating rooms are equipped with the latest, top of the line instruments (neuro-navigator, stapes set and prosthesis, drills, facial nerve monitor, etc.) and video documentation facilities in addition to excellent Radiology and Pathology services.

The scientific/academic computing center located in KKUH aids fellows, staff, and faculty in the scientific computing, including how to use the center's computers, statistical analysis, data acquisition, analysis techniques, research methodology, and mathematical/analytical methods.

3. Surgery

Surgery includes a wide array of office procedure, routine Otology/Neurotology surgery as well as complex and revision surgery. The temporal bone lab is used to carry out experiments on human biological material.

4. Capacity

The Otology/Neurotology fellowship program is very competitive and **currently is accepting two** per year (this number is based on cases load).

5. Training Committee

The training committee is comprised of the Otology/Neurotology consultants at the ORL, H and N Surgery Department of College of Medicine at KSU and the participating consultants from the affiliated hospitals.

The committee manages, supervise and oversee all aspects of the sub- specialty fellowships-training, research and performance of the fellows and ensure that it is updated and meet the required (national/international) standards.

STRUCTURE AND CONTENT OF THE PROGRAM

I. Educational

1. Academic half day

The academic half day represents three hours of teaching time for the resident every Wednesday from 2:00 to 5:00 p.m. Fellows will be excused from their clinic duties at this time to attend this half day if it is related to the sub-specialty. This day is structured with heavy fellows' input and includes didactic and interactive teaching sessions covering most of the major areas of general otolaryngology and the representative subspecialties of the field. It is also a forum for teaching the competencies, ethics, medical legal issues, and subjects in fields related to otolaryngology. Attendance on these days is encouraged, and the fellow is expected to participate in this teaching. **Additionally, there is an otology fellowship activity each Wednesday morning where all the Otologists join including those of the affiliated hospital.**

2. Grand Rounds

The clinical meetings are every Wednesday from 1:00 to 2:00 pm. Most presentations are made by the attending staff and residents in the teaching program. However, presentations are occasionally reserved to visiting professors from around the world with international reputations, or invited clinicians from the KKHU milieu. The meetings allow the fellows to critically review the literature pertaining to a specific case or small series of cases, and present that literature to their peers and staff in otolaryngology. Attendance for these meetings is mandatory.

3. Group rounds

Each ORL group has pre-operative and post-operative rounds once a week. The rounds are designed with heavy fellow input as to the operative management of the patients.

4. Journals and/or ENT Club Meeting

Journal clubs are held 7 times a year on a Wednesday afternoon. Interesting cases are usually presented and are followed by an update on the topic presented. The papers are presented in a PowerPoint format with the presenting resident/fellow highlighting key points. The resident, the fellow, and the attending staff then critically review the paper.

5. Guest speakers

Guest speakers are scheduled on a regular basis throughout the academic year. Speakers are usually asked to give a pre-selected lecture on a Wednesday afternoon or in the Department's ENT update Seminar. The guests are invited in advance, and the entire department is notified through ENT bulletin boards at each respective hospital. Verbal announcements are also made at university rounds concerning guest speakers.

6. Promotion Exams

There is one in-house training exam that is held once a year (usually **October**).

The exam includes short answers questions and an oral exam.

II. Clinical

The fellow participates "hands on" in all Otology/Neurotology clinics and in the operating room. The fellow's clinical schedule mirrors that of the director of Otology/Neurotology fellowship program. Specifically, the fellow will receive clinical training during the two, weekly Otology/Neurotology clinics and the surgical training in the operating room twice per week. Additional clinical teaching takes place during hospital rounds on Otology/Neurotology patients and during the course

of the emergency Otolaryngology/Neurotology cases only. The fellow is clinically involved in on calls from home (approximately 1 in 2).

III. Research

The fellowship program provides numerous opportunities for clinical and basic scientific research in all appropriate and related topic including ear infection, hearing loss, and balance disorder. Fellows have to develop research proposals under the direction of the fellowship director with full departmental support to present the work at the major meetings in Saudi Arabia or abroad.

The following research program structure and policies has been recently approved (2018)

1. The first 3 months

1.1 Fellow(s) will have at least one or two research Proposal(s).

1.2 The two proposals have to be submitted to Institutional Review Board (IRB).

1.3 Attending Courses in research.

1.4 Minimal clinical works, (attend clinic only).

The Fellow has to fulfill these prior to starting his full clinical duty.

2. Requirements for promotion to F2 (Year 2)

2.1 Fellow has to present in the update seminar at least one of his/her research.

2.2 At least one of the researches has to be sent for publication.

3. Requirements to sit for final exam

3.1 Fellow has to have two publications in an ISI Journal or one ISI publication and one Non ISI publication with two presentations in International conferences of his/her research projects.

3.2 Fellow must be the 1st Author on the research projects.

3.3 Case report is not counted.

IV. Elective Period

The fellowship provides opportunity to do elective training, courses, or gain more experience in a high standards centers local or worldwide as arranged by the university department or by the candidate himself after approval of the program board.

The Fellow will be given the opportunity to join any local Otologist/Neurotologist after being approved by the Committee of Fellowship for at least 3 months per year if local program and 1 month if outside the Kingdom and/or abroad (on his/her expenses) provided that 50% of the training is conducted at the University Hospitals.

FELLOW SUPERVISION AND PATIENT CARE RESPONSIBILITIES

Fellows are closely supervised during the first quarter of the fellowship. As the Fellow matures, patient care independence is allowed, however, under the supervision of the fellowship director. At the completion of the fellowship, the fellow should be able to evaluate and manage most of the diseases related to the ear and lateral skull base.

Patient care responsibilities

1. Examine and evaluate patients in the Otolaryngology/Neurotology clinics.
2. Supervise the preparation process for patients requiring Otolaryngology/Neurotology surgery.
3. Round on Otolaryngology/Neurotology in-patients.
4. Supervise otolaryngology residents on the Otolaryngology/Neurotology rotation.
5. Participate in the care of emergency Otolaryngology/Neurotology patients.
6. Be involved in any Otolaryngology/Neurotology emergency patients even belong to general otolaryngologist.
7. Be the primary physician of all Otolaryngology/Neurotology cases referred by other physicians in the department and others

1. Procedural Requirements

Fellow and fellowship supervisors should be aware that the university hospital is a residency training hospital and fellows should not compete with the residents for their cases. The residents have the priority to any case that is classified as a "resident" case and the fellow should observe, train, and provide help as needed for the residents handling these cases.

The following procedures are performed during the fellowship:

| Operations | Observer/Supervisor | Surgeon |
|---|---------------------|---------|
| Myringotomy and tube placement under LA | 20 | 10 |
| Intra-Tympanic injection | 20 | 10 |
| Canaloplasty | 20 | 10 |
| Endoscopic ear exam | 20 | 10 |
| Tympanoplasty | 30 | 10 |
| Mastoidectomy | 10 | 20 |
| Canal wall up | 5 | 10 |
| Canal wall down | 5 | 10 |
| Mastoid obliteration | 2 | 5 |
| Cochlear Implantation | 5 | 50 |
| Stapedectomy | 2 | 10 |
| Ossiculoplasty | 5 | 20 |
| Bone/ middle ear implant | 0 | 5 |
| Skull Base Tumor (Different Approaches) | | 15 |
| Translabyrinthine Approach | | |
| Middle Cranial Fossa Approach | | |
| Retrosigmoid Approach | | |
| Transcochlear/Transotic Approach | | |
| Infracochlear Approach | | |
| Retrolabyrinthine Approach | | |
| Infratemporal Fossa Approach | | |
| Facial nerve anastomosis | 0 | 5 |

| Audiovestibular | Observer | Done by trainee |
|------------------------|-----------------|------------------------|
| Epley maneuver | 2 | 10 |
| v-HIT | 2 | 4 |
| Caloric test | 2 | 10 |
| VEMP | 2 | 4 |
| Posturography | 2 | 5 |
| Rotator chair | 2 | 5 |
| Impedances | 10 | 20 |
| Audiometry | 5 | 10 |
| Speech | 2 | 5 |
| ABR | 2 | 5 |

2. Didactic Components

- 2.1. Attend all department conference pertaining to Otolaryngology/Neurotology.
- 2.2. Assist in implementation of annual Otolaryngology/Neurotology CME program
- 2.3. Give 1 updated Otolaryngology/Neurotology research in the department clinical presentation/year
- 2.4. Give 6 lectures/ year to otolaryngology residents.
- 2.5. Review a minimum of 4 journal articles per year.
- 2.6. Attend the otolaryngology journal club every month and proctor Otolaryngology/Neurotology papers being discussed.
- 2.7. Supervise resident cadaver training dissection.
- 2.8. Supervise the usage of Otolaryngology/Neurotology laboratory dissection materials.
- 2.9. Attend all otolaryngology clinical meetings.
- 2.10. Attend all tumor board conferences where lesions of the ear and lateral skull base are presented.
- 2.11. Provide one resident's seminar every 2 months, whereby the residents select the topic and he/she supervise the discussion. Exam type discussion is encouraged.

The fellow will be required to

1. Attend minimum of one faculty development program held at postgraduate Department in the College Medicine KSU.
2. Complete basic and advanced Temporal bone lateral and skull base courses.
3. Participate in preparation of all the Otology/Neurotology division courses and is considered as a member in all Otology/Neurotology Committees.
4. Attend at least one conference (national or international) related to Otology/Neurotology per year.
5. Research requirements to comply (see Fellow's job description)

A suggested division of time and duties for the full two year period is as follows:

A. YEAR ONE

1. First three months:

1.1 Research – 2 proposals and for submission to IRB

1.2 Audiology

1.3 Vestibular Physiology

1.4 Minimal clinical tasks

1.5 Operating Room for data gathering

2. Second nine months: (At KAUH)

2.1 One day research/ Lectures/ pre & post operation round

2.2 Audiology/Balance rotation

2.3 Two days Otology/Neurotology clinic

2.4 Two days operation room

B. YEAR TWO

1. First three months: Skull base rotation

- 1.1 Neurosurgery
- 1.2 Radiation
- 1.3 Oncology
- 1.4 Radiology
- 1.5 One day research

2. Second nine months:

- 2.1 One day clinic
- 2.2 Two days OR
- 2.3 Two days research / day pre & post operation round

Evaluation

The fellow will be evaluated on the following items using postgraduate evaluation scale from one to 5; 1 being the lowest or very poor performance and 5 being the highest or excellent performance:

Final Exam

Final exam will be at the end of second year. The exam includes:

40% - Written "Short answer questions"

30% - Oral

30% - Evaluation

Fellow Job Description

Title: Otolaryngology/Neurotology Fellow

Department: Department of Otolaryngology Head & Neck Surgery, College of Medicine, KSU

Terms of Employment:

1. KAUH, Riyadh
2. Otolaryngology Head & Neck Department, KSU, Otolaryngology/Neurotology Division

Functions:

A. General:

1. For supporting Otolaryngology administrative patient care policies and protocols.
2. For ensuring exemplary Otolaryngology/Neurotology patient care is provided to the Patient under his / her care.
3. For working cooperatively with all the other staff to ensure exemplary patient care
4. Attends rounds promptly

B. Specific:

1. To help (with the resident) in looking after critically ill patients.
2. Review, prepare and complete all the medical records of the Otolaryngology/Neurotology patients.

C. Evaluation:

1. Assist in the evaluation of residents, medical students, and interns.

D. Teaching:

1. Participate in the teaching of medical students, residents, interns, nurses and patients.

E. Research

1. The first 3 months

1.1 Fellow(s) will have at least one or two research Proposal(s)

1.2 The two proposals have to be submitted to Institutional Review Board (IRB)

1.3 Attending Courses in research

1.4 Minimal clinical works, to attend clinic only

The Fellow has to fulfill all these so that he can start his full clinical duty.

2. Requirements for promotion to F2 (year 2)

2.1 Fellow has to present in the update seminar at least one of his/her research.

2.2 At least one of the researches has to be sent for publication.

3. Requirements to sit for final exam

3.1 Fellow has to have two (2) ISI publications **OR**

3.2 One (1) ISI publication and one (1) Non ISI publication with two presentations in International conferences of his/her research project(s).

3.3 Fellow must be the 1st Author on the research projects.

3.4 Case report is not acceptable.

F. Others:

1. Assume responsibilities for the development and maintenance of own professional competency.

G. At the end of his/her training, the fellow must:

1. Demonstrate competency of Otology/Neurotology Procedures and skills in the use of technology.
2. Demonstrate the ability to assess the Otology/Neurotology patient by:
 - 2.1 Appropriate patient's history documentation and physical Examination.
 - 2.2 Selecting appropriate investigations.
 - 2.3 Interpreting investigations.
3. Make management plan for all Otology/Neurotology problems.
4. Demonstrate effective communication skills.
5. Demonstrate academic qualities pertaining to Otology/Neurotology.
6. Demonstrate effective teaching of the residents.

7. Participate in research work of the department.
 8. Understand the relevant aspects of staff management and administration pertaining to high intensity of work.
- H.** At completion of two years Otology/Neurotology program and passing all the exams and evaluation, the King Saud University fellowship in Otology/Neurotology certificate will be awarded to the candidate from postgraduate of medicine in K.S.U.

GENERAL RULES AND REGULATION: ACCORDANCE TO THE RULES AND REGULATIONS OF KSU

1. Admission Processing

The Postgraduate Medical Education (PGME), Medical Education Center will accept and perform the preliminary review of applicants and forward applications to the program director. The Departmental Residency Committee will then conduct the interview and or selection exam and recommends candidates for acceptance using the special form for selection of candidates (Appendix IIIA of the KSU Policies and Procedures). Results will be forwarded to the Director of the Postgraduate Training Programs, who will forward the results to the Vice Dean of Postgraduate and Continuing Medical Education and the Dean of the College of Medicine. Upon approval of the results the PGME will write acceptance letters to the accepted candidates.

The training will commence 1st working day in **January** each year. The accepted candidates will be registered with the Deanship of Admissions and Registrations.

Application submission from July to September

2. Rotations

Two years including otology/ neurotology, neurosurgery, radiology, neurology and plastic rotations.

3. Teaching commitments must be protected

4. Number of on call

The candidate will be assigned in on-call with the fellowship staff for otology and Neurotology cases (no more than 1 in 2).

5. Withdrawal

A valid reason for withdrawal must be given in writing to the Otolaryngology/Neurotology program director. Submission of withdrawal should be made 3 months before the end of the training year to the Departmental Residency Committee (DRC) which will refer the request to the Postgraduate Training Board (PGTB) with recommendations. The final decision will be made by the PGTB who will give their final reasons in writing. In case the withdrawal was rejected by the PGTB and the resident left the program without permission, he will not be allowed to join any other programs for one year.

6. Disciplinary actions

Disciplinary actions will be in accordance with the KSU Residency Training Programs Policies and Procedures. Any resident exhibiting poor performance or misconduct will be thoroughly discussed in the (DRC) and the policies and procedures will be applied. In case of dismissal from the program, the DRC has to refer the matter to the PGTB for appropriate decision. The PGTB will then forward the matter to the Vice Dean of the Postgraduate and Continuing Medical Education.

7. Vacation

7.1 Must be according to the postgraduate guidelines, please refer to the KSU Residency Training Programs Policies and Procedures.

7.2 The fellow is entitled to a four (4) weeks' vacation per year and should be approved by the director of Otolaryngology/Neurotology Fellowship program and in accordance with the Department protocols.

7.3 The fellow should have one of the Eid Holidays.

7.4 Justified absence from the program such as sick and maternity/paternity leave should be compensated if more than 1 week/year.

7.5 Educational leave will be granted to attend one hands-on course a year and one international conference a year. If the candidate is presenting his / her research, he /she can attend any additional number of meetings to present his / her work.

7.6 The elective training period for mini fellowships are not to be part of the educational leaves.

Suggested Readings

It is highly recommended that each fellow read the following:

1. Otology/Neurotology part of general textbooks of otolaryngology general reference (i.e.) Cummings, Scott-Brown, Bailey and Ballenger)
2. Otology/Neurotology set of SIPAC's (self-instructional packets from AAO-HNS)
3. Otolaryngology Clinics of North America series
4. Computer applications SPSS:Data management program
5. Otologic surgery (Brackman)
6. Imaging of the temporal bone (Swartz)
7. Middle ear and mastoid microsurgery (Sanna)
8. Vestibular disorders A case-Study Approach (Furman)
9. Handbook of Balance function testing (Jacobson)
10. Clinical neurophysiology of the vestibular system (Baloh)
11. Dizziness, hearing loss and tinnitus (Baloh)
12. How to write and publish a scientific paper (Day)
13. Reference Manager Program