

**UNION EUROPEENNE DES MEDECINS SPECIALISTES (UEMS)
EUROPEAN UNION OF MEDICAL SPECIALISTS (UEMS)**

AUDIOLOGY AND VESTIBOLOGY

Training Programme and Logbook



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INTRODUCTION

The UEMS-ORL Section and Board of Otorhinolaryngology has developed an European training programme for the subspecialty of Audiology and Vestibulology- This training is based on a common trunk with the specialty of ORL.

The training programme will serve as a guideline for approved training centres for Audiology and Vestibulology to meet the European standard, as set out the European Board of UEMS-ORL section. The aims and goals of such training are based on competency-based curriculum.

Mission statement: The goal of subspecialisation training is to prepare the trainee with the skills and knowledge that will enable the trainee to provide independent, high-quality care within the subspecialty, and to function as a teacher and supervisor for students, colleagues, and other staff.

DEFINITIONS

Audiology and Vestibulology are the knowledge of the hearing and balance system and associated malfunctions and disorders and include the skills to identifying, diagnosing, managing and monitoring disorders of the auditory and vestibular system.

The subspecialisation in Audiology and Vestibulology, include identifying, diagnosing, treating and monitoring disorders of the auditory and vestibular system.

A subspecialist in Audiology and Vestibulology defined by UEMS-ORL is a medical doctor with the specialist training in otorhinolaryngology that have fulfilled goals and met the criteria for subspecialty training in Audiology and Vestibulology described below.

TRAINEE /FELLOW

In order to be enrolled in subspecialty training in Audiology and Vestibology candidates must:

- be able to diagnose and treat common and important disorders in the field of otorhinolaryngology, especially conditions which need emergency.
- have a deep knowledge of the audiology and vestibology area included in the UEMS logbook for ORL specialist.
- be able to initiate and manage health quality improvement in multi-professional team with perspective of the patients
- be able to manage time and clinical resources for the benefit of patients and colleagues and
- be able to work effectively in a team and good communication

Only training and practice completed after basic medical qualification will count towards the requirements for specialisation.

- have appropriate knowledge, skills and training in Otorhinolaryngology including sufficient knowledge of the basic sciences related to the auditory system and related organ,

TRAINING PROGRAMME

The overall outcome of the subspecialisation training programme of Audiology and Vestibology include the following knowledge, skills and attitudes:

To be able to perform clinical investigations, evaluate the results of audiological and vestibular tests and treatment of common and important disorders in the field of audiology and vestibology. Evaluate result of behavioural, physiological tests and laboratory tests

To have knowledge of acoustics and physics related to sound propagation.

To have knowledge of effects of noise on human health and be aware of methods of prevention of noise induced effects of the human body.

To be able to diagnose, evaluate and manage disorders causing hearing loss.

To be able to diagnose, evaluate and manage tinnitus and dysacusis

To be able to evaluate, diagnose and treat vestibular disorders and to be able to recognise other disorders that may cause vertigo and imbalance.

Knowledge and skills in rehabilitation of children and adults with central auditory disorders

To know the criteria for different hearing aids and management for communication strategies for instance technical solutions and alternative communication strategies for people with hearing loss or deafness.

The curriculum also aims to provide trainees with the following:

Knowledge and skills to independently perform and interpret investigations required in Audiology and Vestibulology.

Knowledge to establish a differential diagnosis of patients presenting with audio-vestibular problems by the appropriate use of clinical history, examination, and investigations

The ability to apply relevant physiological knowledge within Audiology and Vestibulology

Appropriate attitudes and communication skills in dealing with patients and have a holistic perspective to patients.

Sound knowledge of health promotion, disease prevention and rehabilitative plans

The ability to apply the skills of life-long learning to keep up to date with developments in Audiology and Vestibulology, together with the ability to critically assess new scientific data

The ability to critical assess scientific data and to implement such knowledge in order to take responsibility in the development of the speciality

The ability to participation in research aiming to develop the subspecialty

How to obtain the skills:

The teaching methods include clinical practice, auditing, courses, Individual written assignments based on scientific principles,

It is through learning to diagnose audiological and vestibular disorders that trainees may acquire the bulk of required knowledge. In order to experience the continuity in the doctor-patient relationship that forms the basis for properly understanding patients with long-term impaired functioning, trainees must engage in long periods of consistent clinical practice.

Longer periods of clinical training at university clinics are also important in terms of providing advanced audiological and vestibular diagnostic skills and knowledge.

It is also important that trainees gain experience in different specialties and areas that overlap with Audiology and Vestibulology. This may be achieved by supplementing core clinical training with training within one or more of the following specialties: neurology, paediatrics, geriatrics, clinical genetics or psychiatry.

In some cases, auditing may be sufficient to cover minor knowledge areas within the specialty. In conjunction with their clinical training, trainees should also study relevant theory and participate in courses and conferences.

REQUIREMENT OF TRAINING CENTRE

The training centre must have evidence of sustained clinical volume and activity in management of audiology and vestibulology. The centre must have trained supervisors in the areas that are applicable for the training program.

The centres have to be aligned with evidence-based practice and participate in developing new knowledge and or implement evidence based knowledge and practice.

The centre needs to have such governance that met the standard of the national board's requirements.

The centre needs to have facilities and give the trainee time available for didactic learning opportunities.

The centre needs to have facilities and time allocation for basic scientific research for the trainee.

The centre needs to have facilities for study and availability of library – journals, textbooks, videos, internet etc.

Practice in health-care institutions or their equivalent abroad will also count towards the requirements for specialisation, if that practice:

a) was part of an individual training program,

b) was supervised and certified by the Clinical Manager of the institution or equivalent, and

c) lead to the completion of a relevant subsidiary objective, as evaluated by the Clinical Manager or equivalent attesting to the completion of all mission statement requirements

The care provider shall give directives and ensure that documented routines exist for the implementation, regular evaluation and external examination of the trainee's clinical practice

Evaluation of the training-centre will be made according to the description in chapter 6 in UEMS ORL

SUPERVISION AND PROGRAMME DIRECTOR

The head of the department is responsible for appointing a supervisor with appropriate specialist qualifications in Audiology and Vestibulogy The supervisor must have completed supervisory training. The head of department is also responsible for ensuring that an individual training program is implemented in

consultation with both the trainee and the supervisor, based on the requirements listed in the mission statement and subject to regular review, as needed.

A "Training Record" will be maintained by the trainee, supported by the supervisor, to confirm the satisfactory fulfilment of the required training experience and the acquisition of the relevant competencies. The acquisition of these competencies will be assessed externally.

If gaps in knowledge are identified, these should be addressed through improvements to the trainee's individual program and/or to the training institution's educational program, or, where appropriate, through a clarification of the commitment required from the trainee.

A Director of Studies with specialist qualifications should also be available to support the head of the department, trainee, and supervisor

The head of the department shall meet regularly with the trainee to discuss the trainee's development. These meetings must be documented by the head of the department; similarly, the supervisor must document all meetings with the trainee, and the trainee must document all meetings with the supervisor and the head of the department

EXAMINATION AND CERTIFICATION

Once an application for certification is received, the National Board in each country will check whether the candidate has met the goals, both the time requirement for clinical practice, and the various requirements listed by the mission statement.

The teaching methods will be assessed and validated in certificates that should accompany the trainee's application for specialist certification when it is sent to the National Board. If the country has not a defined subspecialty the UEMS-ORL section and board may appoint the subspecialist Fellow of UEMS-ORL Audiology and Vestibology subspecialty fellow.

Specialist certification is acquired through a combination of supervised clinical practice and participation in supplementary training as well as.

Review of Applications for Specialist Certification

1) the practice and teaching methods for the various objectives listed in the mission statement were demonstrably relevant to the trainee's development of primary and secondary competencies and achievement of an appropriate, over-all level of knowledge

2) all persons supporting and certifying the trainee's application are appropriately qualified

3) research qualifications and clinical practice abroad have been assessed and certified by appropriately qualified individuals

Completion of a specialised written exam in auditory and vestibular disorders, are currently being planned and is recommended.

LOGBOOK OF TRAINING SECTIONS

- (1) Basic Sciences related to Audiology and Vestibulogy
- (2) Adult Audiology
- (3) Paediatric Audiology
- 5) Preventive Audiology
- 5) Rehabilitation
- (6) Vestibulogy

LOGBOOK OF TRAINING SECTIONS

BASIC SCIENCES related to Audiology and Vestibology	Performance Category (g), (a)	Date	Signature Trainer
Anatomy, physiology and biochemistry of the audiovestibular system and related organs (ear, the auditory pathways, and the auditory cortex)			
embryologic development of the above			
normal development stages of hearing and auditory processing and of behavioural responses to sound			
signs and symptoms of hearing impairment/deafness			
Basic phonetics, speech reception and speech production			
WHO:s international classification of functioning, disability and health (ICF)			
Epidemiology of hearing disorders etiology of hearing disorders and the likelihood of involvement of other systems			
differential diagnostics of hearing impairment			
syndromes associated with hearing impairment			
genetics of hearing impairment			
psychomotor and cognitive stages of normal children of different ages			
speech and language stages of normal and hearing impaired children			
Basic physics, acoustics, psychoacoustics			
technical standards and calibration			
ADULT AUDIOLOGY			

Pathology and Subtypes of hearing disorders	Performance Category (a), (s) or (i)	Date	Signature Trainer
sensorineural hearing loss			
conductive hearing loss			
combined sensorineural and conductive hearing loss			
auditory neuropathy/auditory dyssynchrony			
auditory processing disorders			
Hyperacusis, tinnitus			
sudden/progressive/fluctuating hearing loss			
non-organic psychological hearing loss			
other			
Psychoaudiometry and electro-physiologic testing (understanding the indication and interpret the results)	Performance Category (a), (s) or (i)	Date	Signature Trainer
pure tone audiometry (air conduction, bone conduction with or without masking)			
Bekesy audiometry			
tactile reinforcement audiometry for visually impaired adults			
conditioning techniques for sound field (multiple loudspeakers in a half circle) and ear specific audiometry (use of insert earphones)			
distraction testing on adults with comorbid or multiple disorders			
determining uncomfortable loudness thresholds			
tests to determine dead regions			
loudness scaling procedures			
Tinnitus match and similar investigations			
speech audiometry including speech in noise using recorded speech samples			

speech audiometry including speech in noise using open and closed set paradigms			
speech audiometry including speech in noise using adaptive, computer controlled procedures			
auditory processing tests of intensity, frequency and phonetic discrimination			
auditory processing tests of temporal resolution (i.e. gap detection)			
low redundancy speech tests, i.e. speech in noise, filtered, compressed, expanded, interrupted or reverberated speech signals			
dichotic speech tests			
acoustic immittance measures: (high frequency) tympanometry, stapedius reflex measures,			
otoacoustic emissions (transient, distortion product, spontaneous, contralateral suppression			
bone-conduction ABR			
frequency specific ABR (Notched-Noise, Tone-Burst, Chirp etc.)			
indication and interpretation of auditory steady state responses (ASSR)			
promontory test			
electro-audiometry			
audiometry to evaluate hearing aid fitting: comparison of subjective audiometric results obtained with and without hearing aids			
verification measurements of hearing aid function: insertion gain measurements, measuring real ear to coupler difference, SPL-o-gram			
transforming ABR-results from dB (nHL) in dB (HLe) for the fitting of hearing aids			
ERA-measurements with hearing aids			

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Clinical Diagnostics	Performance Category (a), (s) or (i)	Date	Signature Trainer
Dysmorphology			
Communication			
General physical examination			
General neurological examination			
General neuro-otological examination			
Otoscopy			
Microscopy			
laboratory examinations including serologic and autoimmunologic investigations			
allergy tests			
neurological examination			
clinical neuro- and electrophysiological examinations			
radiologic diagnostics			
genetic testing			
special diagnostic needs of adults with multiple diagnoses or disturbances Special diagnostic needs of adults with multiple diagnoses or disturbances			
management of psychological sequels after sudden hearing loss			
other			
PAEDIATRIC AUDIOLOGY			
Pathology and Subtypes of hearing disorders	Performance Category (a), (s) or (i)	Date	Signature Trainer

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sensorineural hearing loss			
conductive hearing loss			
combined sensorineural and conductive hearing loss			
auditory neuropathy/auditory dyssynchrony			
auditory processing disorders			
hyperacusis/tinnitus especially in children			
sudden/progressive/fluctuating hearing loss			
non-organic psychological hearing loss			
other			
Psychoaudiometry and electro-physiologic testing (understanding the indication and interpret the results)	Performance Category (a), (s) or (i)	Date	Signature Trainer
behavioural observation audiometry			
visual reinforcement audiometry			
tactile reinforcement audiometry for visually impaired children			
play audiometry			
conditioning techniques for sound field (multiple loudspeakers in a half circle) and ear specific audiometry (use of insert earphones)			
distraction testing on normal or children with comorbid or multiple disorders			
pure tone audiometry (air conduction, bone conduction with or without masking)			
determining uncomfortable loudness thresholds			
tests to determine dead regions			
loudness scaling procedures			
Tinnitus match and similar investigations			
speech audiometry including speech in noise using recorded speech samples			

speech audiometry including speech in noise using open and closed set paradigms			
speech audiometry including speech in noise using age related speech audiometry with and without pictures			
speech audiometry including speech in noise using adaptive, computer controlled procedures			
auditory processing tests of intensity, frequency and phonetic discrimination			
auditory processing tests of temporal resolution (i.e. gap detection)			
low redundancy speech tests, i.e. speech in noise, filtered, compressed, expanded, interrupted or reverberated speech signals			
dichotic speech tests			
acoustic immitance measures: (high frequency) tympanometry, stapedius reflex measures,			
otoacoustic emissions (transient, distortion product, spontaneous, contralateral suppression			
bone-conduction ABR			
frequency specific ABR (Notched-Noise, Tone-Burst, Chirp etc.)			
indication and interpretation of auditory steady state responses (ASSR)			
promontory test			
electro-audiometry			
audiometry to evaluate hearing aid fitting: comparison of subjective audiometric results obtained with and without hearing aids			
verification measurements of hearing aid function: insertion gain measurements, measuring real ear to coupler difference, SPL-o-gram			

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transforming ABR-results from dB (nHL) in dB (HLe) for the fitting of hearing aids			
ERA-measurements with hearing aids			
Clinical Diagnostics	Performance Category (a), (s) or (i)	Date	Signature Trainer
Dysmorphology			
Communication			
General physical examination			
General neurological examination			
General neuro-otological examination			
Otoscopy			
Diagnostic interview of parents including family history and recording of family tree in case of familial deafness			
Clinical examination including endoscopy/ear microscopy			
Diagnostics of communication skills	Performance Category (a), (s) or (i)	Date	Signature Trainer
Indicate and evaluating a developmentally appropriate balance assessment of the child including an appropriate eye movement examination			
Indication and interpretation of interdisciplinary diagnostic procedures	Performance Category (a), (s) or (i)	Date	Signature Trainer
occupational therapy examinations			
evaluation of general cognitive developmental stage			
child psychological examinations including tests			

to rule out attention deficit disorders			
laboratory examinations including serologic and autoimmunologic investigations			
allergy tests			
examination of extra-oesophageal reflux			
neurological examination of children			
clinical neuro- and electrophysiological examinations			
paediatric, urologic, and ophthalmologic examinations of children			
radiologic diagnostics			
genetic testing			
special diagnostic needs of children with multiple diagnoses or disturbances Special diagnostic needs of adults with multiple diagnoses or disturbances			
management of psychological sequels for parents after diagnosis			
PREVENTIVE AUDIOLOGY AND VESTIBOLOGY	Performance Category (g), (a)	Date	Signature Trainer
Understand the principles of primary, secondary and tertiary prevention. Understand the epidemiological methods and its prevention: Knowledge of Noise and its effects on audiovestibular system Knowledge of ototoxic drugs and its effects on audiovestibular system			
Hearing screening programme, NHS, preschool, school programmes <ul style="list-style-type: none"> ▪ using screening principles and methods ▪ dealing with screen failures ▪ setting up a screening program in a district 			

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▪ monitoring and audit the screening program			
early hearing detection and intervention programs			
management of control intervals			
early aetiological investigations			
role of immunisation			
parent guidance programs; enhancing parental communication skills			
genetic counselling			
Parental guidance in respect of hearing conservation, preventing head trauma, diminishing stress etc.			
hearing tests in adults with multiple disorders			
other			
REHABILITATION	Performance Category (a), (s) or (i)	Date	Signature Trainer
Strategies to cope with hearing loss and knowledge of aural rehabilitation programs: oral-aural (e.g. auditory-verbal, natural interactional), manual, combined			
Strategies to cope with tinnitus			
Benefits of amplification			
Cochlear implantation			
Evaluation of hearing aid gain			
Fitting digital hearing aids training in handling hearing devices and cochlear implants			
Assistive listening devices, including the radio aid and FM soundfield systems, alarm systems, loop systems			
Tinnitus maskers/ WNG			
Education of the deaf and hearing impaired			
Alternative methods of communication			
special needs for early intervention and parent guidance in babies and toddlers			

auditory training principles			
speech and language therapy in hearing disabled			
alternative modes of communication, principles of augmentative communication methods			
principles of literacy training in hearing disabled			
training in respect of specific deficits, i.e. training of compensatory strategies and improving the signal/noise ratio in children with auditory processing disorders			
knowledge of tinnitus therapy (training, masker)			
knowledge of educational placement opportunities and social support			
management of psychological and socio-emotional sequels for children with deafness or severe hearing loss and its family			
management of cultural influences on the rehabilitation			
rehabilitation of children with multiple diagnoses or disturbances			
knowledge of national legal regulation of special support			
Write adequate medical certificates and give medical opinions when patient seek assistance			
Medical Treatment	Performance Category (a), (s) or (i)	Date	Signature Trainer
general therapeutic principles in respect of infection, sudden hearing loss, acoustic trauma, tinnitus etc.			
management of auditory tube dysfunction including antiallergic therapy, antireflux therapy, remediation of the paranasal sinuses			
other			

Otologic Surgery	Performance Category (a), (s) or (i)	Date	Signature Trainer
indication and surgical procedures of tube dysfunction including grommets, tonsillectomy/tonsillotomy and adenoidectomy			
indication and surgical procedures concerning congenital malformations of the ear			
indication and surgical procedures concerning bone anchored hearing aids, implantable hearing aids, cochlear implants			
cooperation in the surgical management in children with different stages of cleft palate			
cooperation in the surgical management of XX			

VESTIBOLOGY	Performance Category (a), (s) or (i)	Date	Signature Trainer
To be able to assess patients with vertigo and disequilibrium and provide adequate treatment inform and motivate their participation in treatment			
To be able to assess, diagnose and treat patients with acute vertigo and identify non-otological vertigo requiring acute treatment			
Recurrent vertigo and disequilibrium To be able to determine the cause of vestibular disorders with remitting and relapsing courses and determine the effect on the QL and initiate appropriate management and referral			
To be able to diagnose chronic imbalance correctly and initiate appropriate management is instigated and to optimise the patient's activity			

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level and ability to work			
Drop-attacks- be able to determine the cause of the black-out or drop attack initiate appropriate management			
Vertigo and imbalance in the elderly- be able to identify the cause of falls in the elderly and initiate appropriate management			
Dizziness and imbalance in children and the way a child might describe dizziness and vertigo. assess, manage and treat children suffering from dizziness or imbalance	advanced		
other			
other			