

European Board Head and Neck Radiology Diploma

Endorsement requested from the European Society of Radiology (ESR) for a period of three years (December 2020-December 2023)

1. Aim(s) and target group

The diploma introduced by ESHNR since 2009 is the common European qualification for head and neck radiology specialists and will help to standardise training and expertise in head and neck imaging subspecialisation across Europe. The ESHNR Diploma has been endorsed by the European Society of Radiology (ESR) since 2011.

The European Board in Head and Neck Radiology Diploma is a document certifying an in-depth knowledge of the pertinent anatomy, pathology and imaging-related issues in the field of head and neck and maxillo-facial and dental radiology as defined in the [Head and Neck Subspecialty \(Level III\) Curriculum of the ESR](#), going beyond the requirements included in the European General Radiology Curriculum.

This diploma represents a recognised qualification in head and neck imaging subspecialisation and will assist head and neck radiologists in the promotion of their skills and experience when dealing with other clinical colleagues as well as the general public.

2. Eligibility criteria

Applicants for the European Board in Head and Neck Radiology Diploma must fulfil the requirements mentioned below and must provide documents as follows (if applicable an English translation must also be provided in addition to original documents):

a) Application form

The completed application form must be submitted to the ESHNR Office.

b) Training in radiology

The training of candidates has to be in line with previously established basic principles of radiology training as laid out in the ESR European Training Curriculum for Radiology (Level I and II). Applicants have to prove at least five years of national training in radiology. A certificate of completed training needs to be provided.

Subspecialisation should take place after the designated time for radiology residency. In exceptional cases, partial subspecialisation may already start within the years of differentiation (e.g. UK / NL). For candidates with less than five years of training, a proof of experience, as a supervised radiologist is required.

c) Subspecialty training

At least two years of subspecialty training or equivalent experience, following radiology certification, is required. Maximum one year of subspecialty training can be done before board certification. A signed letter from the head of department/programme director has to be provided.

The level of knowledge requested from candidates has to correspond to the curricular contents for full subspecialisation in the field of radiology provided by the ESR European Training Curriculum for Subspecialisation in Radiology (Level III).

d) Proof of practice

Diplomas may only be awarded to fully trained, licensed, and practicing radiologists. Specialists from other fields and radiologists no longer in practice are specifically excluded from being granted the ESR-endorsed ESHNR diploma. For the purposes of this requirement, a proof of practice has to be provided.

e) RIS documentation/Logbook

RIS documentation or logbook with a total record of the candidate's experience in head and neck radiology countersigned by the candidate's programme director (at least two years of subspecialty clinical practice/training certified by the programme director are required).

f) Letter of support

A letter of support from the head of department/programme director is required.

g) CME credits

At least 100 CME credits in head and neck radiology events and/or activities, recognised by ESHNR, are required. The list of events and activities providing CME credits is updated regularly on the ESHNR webpage.

ESHNR recommends attending its webinars to get continuous education, CME credits and training for the diploma. Furthermore, attending the annual ESR meetings and using the online resources of the ESR is strongly encouraged.

h) Curriculum vitae

A curriculum vitae (CV) has to be provided.

i) ESHNR and ESR membership

Applicants have to be active full or corresponding radiologist members in good standing of ESHNR and ESR, in the year(s) of application and examination.

3. Knowledge base

The knowledge base is in line with the European Training Curriculum for Subspecialisation in Radiology (Level III) published by ESR in March 2020 (<https://www.myesr.org/media/2840>). Furthermore, the knowledge base from level I and level II are presumed to be known and may also be tested in the exam.

KNOWLEDGE

- To have an in-depth knowledge of the normal anatomy of the head and neck, including the skull base, cranial nerves, temporal bone, paranasal sinuses, the oral cavity, pharynx and larynx, the middle and inner ear, salivary glands, thyroid and parathyroid glands, thoracic inlet, orbit, teeth, mandible and temporomandibular joint, lymph nodes, arterial and venous system, and the neck including deep spaces and compartments as demonstrated by CT, cone beam CT (CBCT), US, MRI, angiography, video-fluoroscopy, conventional radiographs, PET/CT and PET/MRI
- To have an in-depth knowledge of normal variants of the head and neck, including paranasal sinuses, oral cavity, pharynx and larynx, temporal bone, skull base, orbit, teeth, temporomandibular joint, thyroid and parathyroid, salivary glands, neck and thoracic inlet
- To have an in-depth knowledge of clinical practice relevant to pathologic conditions of the head and neck and how to investigate these according to the latest recommendations and state of the art protocols
- To have an in-depth knowledge of the mean exposure doses of CT, cone beam CT (CBCT), conventional radiography, X-ray angiography, X-ray-guided interventional procedures, radionuclide imaging and PET/CT
- To have an in-depth knowledge of common and rare diseases of the eye and orbit, temporal bone and skull base, cranial nerves, paranasal sinuses, thyroid, parathyroid and salivary glands, teeth, temporomandibular joints and mandible, pharynx and larynx, lymph nodes, vessels and soft tissues in the head and neck, thoracic inlet including the brachial plexus and deep spaces
- To have an in-depth knowledge role of ultrasound- and/or CT-guided puncture of salivary glands, lymph nodes, thyroid gland and other head and neck masses
- To have an in-depth knowledge of the role, advantages and disadvantages of CT, ultrasound, cone beam CT, video-fluoroscopy and MRI applications in the head and neck
- To have an in-depth knowledge of the anatomy of the arterial and venous system and its relevance to interventional radiology
- To describe the principles of CT, CBCT, MRI with DWI, US, PET/CT and image processing pertinent to traumatic, inflammatory, infectious, neoplastic and congenital

conditions of the head and neck and to understand the principle of newer AI tools and their potential benefit in the head and neck

- To understand the role and applications of radiotracers used in hybrid imaging in head and neck radiology
- To know the TNM classification of head and neck tumours and imaging-related issues
- To fully master the terminology for describing the site of lymph nodes in the head and neck region

TEMPORAL BONE

- To confidently list, describe and differentiate common and uncommon imaging features of congenital disorders leading to deafness (e.g. cochlear aplasia / hypoplasia, Mondini malformation, large endolymphatic sac anomaly (LESA) / large vestibular aqueduct syndrome (LVAS))
- To have in-depth knowledge of the imaging features and clinical features of disorders leading to secondary deafness including otosclerosis, Menière's disease, temporal bone inflammatory disease and tumours of the cerebellopontine angle
- To confidently delineate the course of cranial nerves VI – XI in their different components
- To have in-depth knowledge of:
 - the imaging and clinical features of cholesteatoma and other inflammatory lesions
 - the imaging and clinical features of traumatic lesions and fractures of the temporal bone
 - the imaging and clinical features of tumours of the temporal bone and cerebellopontine angle and to distinguish these from each other
- To confidently differentiate different pathologies of the external auditory canal, including atresia and tumours
- To differentiate different pathologies of the middle ear
- To be familiar with the different types of cochlea implants and their respective MRI compatibility / non-compatibility (including specific precautions)
- To know the various causes of vascular tinnitus and to describe their respective imaging features

FACIAL SKELETON, SKULL BASE AND CRANIAL NERVES

- To list the different neoplasms of the clivus and to describe their respective imaging appearance, including meningioma, macroadenoma, chordoma, chondrosarcoma and others
- To confidently describe the imaging and clinical features of lesions of the jugular foramen, including glomus tumour / paraganglioma, jugular bulb pseudolesions, jugular bulb diverticulum, dehiscent jugular bulb, jugular foramen schwannoma, jugular foramen meningioma and others
- To confidently describe the imaging features and clinical features of diffuse diseases of the skull base, including fibrous dysplasia, plasmocytoma, Langerhans cell histiocytosis, chondrosarcoma and metastases
- To have in-depth knowledge of the normal anatomy and function of the cranial nerves and to list common and less common pathologies
- To list and categorise traumatic lesions of the facial skeleton and skull base and to be familiar with complications and therapeutic consequences
- To describe the typical imaging features of neoplasms of the mandible and maxilla
- To have in-depth knowledge of the imaging features of jaw lesions including cysts and cyst-like lesions
- To have in-depth knowledge of the imaging features of infectious and inflammatory lesions of the mandible, maxilla and skull base, including osteomyelitis, osteoradionecrosis and bisphosphonate osteonecrosis

ORBIT AND VISUAL PATHWAYS

- To have in-depth knowledge of:
 - the imaging and clinical features of congenital lesions of the orbit, including coloboma
 - the imaging and clinical features of typical tumours of the orbit in children including dermoid and epidermoid cysts, cavernous haemangioma, lymphangioma, rhabdomyosarcoma and retinoblastoma
 - the orbital manifestations of neurofibromatosis type I and other congenital diseases
 - the imaging and clinical features of infectious and inflammatory disorders of the orbits including optic neuritis, abscesses, sarcoidosis and idiopathic inflammatory disorders
 - the imaging and clinical features of benign tumours of the orbits in adults including meningioma, optic / chiasmal glioma, orbital haemangioma and benign mixed tumour of the lacrimal gland

- the imaging and clinical features of malignant tumours of the orbits in adults including ocular melanoma, orbital lymphoma, higher grade optic / chiasmal glioma, adenoid cystic carcinoma of the lacrimal glands

NOSE, NASOPHARYNX AND PARANASAL SINUSES

- To confidently describe the imaging and clinical features of congenital lesions of the paranasal sinuses including choanal atresia and frontoethmoidal encephalocele
- To differentiate normal variants of the nose and paranasal sinuses from pathology
- To confidently describe the imaging and clinical features of infectious and inflammatory disorders of the nose and paranasal sinuses including acute and chronic rhinosinusitis, fungal sinusitis, sinonasal polyposis, sinonasal mucocele and sinonasal Wegener granulomatosis
- To be knowledgeable of typical complications of infectious and inflammatory disorders of the nose and paranasal sinuses
- To list and describe the typical surgical approaches to the nose and paranasal sinuses including functional endoscopic sinus surgery (FESS)
- To have an in-depth knowledge of the imaging and clinical features of benign and malignant neoplasms of the nose and paranasal sinuses including inverted papilloma, juvenile angiofibroma, sinonasal hemangioma, sinonasal osteoma, sinonasal fibrous dysplasia, sinonasal squamous cell carcinoma, sinonasal adenocarcinoma, sinonasal melanoma, esthesioneuroblastoma, sinonasal lymphoma and others
- To describe the typical imaging features of the nose and paranasal sinuses after surgery
- To describe the imaging features and clinical features of the nasopharyngeal pathologies including Thornwaldt cyst, inflammatory and infectious lesions and neoplasms

MASTICATOR SPACE, PAROTID SPACE AND CAROTID SPACE

- To have an in-depth knowledge of:
 - the anatomical delineations of the masticator space, parotid space and carotid space
 - pseudolesions of the masticator space, including denervation atrophy, benign muscle hypertrophy and asymmetries of the pterygoid venous plexus
 - the typical and rare imaging features of abscess formations of the masticator space

- the imaging features and clinical features of benign and malignant neoplasms of the masticator space including peripheral nerve sheath tumours of the trigeminal nerve
- the imaging features and clinical features of infectious and inflammatory lesions of the parotid space including parotitis, Sjogren syndrome and benign lymphoepithelial lesions in patients with HIV
- the imaging features and clinical features of benign and malignant neoplasms of the parotid space including Warthin tumour, benign mixed tumour, adenoid cystic carcinoma, mucoepidermoid carcinoma, lymphoma, lymph node metastases and malignant tumours of the skin
- the imaging features and clinical features of vascular lesions of the carotid space including ectatic carotid arteries, carotid artery pseudoaneurysm, carotid artery dissection and jugular venous thrombosis
- the imaging features and clinical features of neoplasms of the carotid space including carotid body paraganglioma, glomus vagale paraganglioma, schwannoma and neurofibroma and to know the use of radiotracers for the work up of these lesions on hybrid studies

LYMPH NODES OF THE HEAD AND NECK REGION

- To have an in-depth understanding of the nomenclature of the lymph nodes and nodal regions and implications for TNM staging
- To confidently describe the imaging features and clinical features of infectious and inflammatory disorders of the lymph nodes including reactive lymph node enlargement, suppurative lymph nodes, Kimura disease, Castleman disease and others
- To describe the imaging features and clinical features of neoplastic disorders of the lymph nodes, including lymphoma (Hodgkin and Non-Hodgkin) and nodal metastases
- To have an in-depth understanding of new imaging modalities and techniques including diffusion-weighted imaging, perfusion, PET/CT and elastography

ORAL CAVITY, OROPHARYNX AND RETROPHARYNGEAL SPACE

- To have an in-depth knowledge of:
 - the imaging features and clinical features of congenital lesions of the oral cavity and oropharynx, including dermoid and epidermoid cysts, accessory salivary tissue, lymphangioma and lingual thyroid gland
 - the imaging features and clinical features of inflammatory and infectious lesions of the oral cavity and oropharynx, including abscesses, retention cysts, sialoceles, sialadenitis and ranula

- the imaging features and clinical features of benign and malignant neoplasms of the oral cavity and oropharynx, including benign mixed tumours, squamous cell carcinoma, malignant tumours of the minor salivary glands
- the typical imaging features and clinical presentation of retropharyngeal abscesses

HYPOPHARYNX, LARYNX AND CERVICAL OESOPHAGUS

- To have an in-depth knowledge of:
 - the imaging features and clinical features of neoplasms of the hypopharynx and larynx, including squamous cell carcinoma of the hypopharynx, of the supraglottic, glottic and subglottic regions, chondrosarcoma and other malignant tumours of the larynx
 - the typical imaging features of the hypopharynx and larynx after surgery and after radiation therapy
 - the imaging features of vocal cord paralysis
 - the potential effects and the respective imaging features of laryngeal trauma
 - the imaging features, causes and clinical consequences of tracheal stenoses
 - the imaging features of laryngoceles and pharyngoceles, webs and strictures
 - functional abnormalities of the larynx and hypopharynx during impaired swallowing including primary and secondary aspiration and dysfunction of the cricopharyngeal muscle
 - the imaging features and clinical features of cervical oesophageal carcinoma
 - the imaging features and clinical features of a Zenker diverticulum and the typical approaches to therapy
- To have a thorough understanding of PET/CT and PET/MRI findings in head and neck tumours involving the pharynx, larynx and oral cavity, common pitfalls and to understand the potential role of new tracers and their application in head and neck oncology

THYROID AND PARATHYROID GLANDS

- To describe the imaging and clinical features of thyroiditis and goiter, and of benign and malignant neoplasms of the thyroid and parathyroid glands, including thyroid and parathyroid adenomas, different types of thyroid carcinoma and thyroid lymphoma
- To describe the most important findings of Tc-99m-scintigraphy and PET/CT in various diseases of the thyroid gland

CONGENITAL AND TRANSSPATIAL LESIONS

- To have an in-depth understanding of the embryology of the head and neck region
- To confidently describe the imaging features and clinical features of branchial cleft cysts
- To confidently describe the imaging features and clinical features of thyroglossal duct cysts
- To describe the imaging features and clinical features of thymus cysts
- To have an in-depth knowledge of the imaging features and clinical features of vascular lesions including malformations of the head and neck region
- To confidently describe the imaging manifestations of neurocutaneous syndromes, including neurofibromatosis type I, in the head and neck region
- To describe the imaging features and clinical features of fibromatosis colli

SKILLS

- To confidently plan and protocol contrast enhanced CT, CBCT, MRI and PET/CT for the evaluation of pathologic conditions of the head and neck
- To understand and to confidently adapt the parameters of MRI sequences in order to avoid poor quality images and to obtain the information necessary for the diagnosis in head and neck imaging
- To perform the 2D and 3D reconstructions necessary for the interpretation / illustration of findings as well as more advanced post-processing techniques including multimodality data fusion and multiple layers reconstructions and post-processing of perfusion maps
- To perform independently video-fluoroscopy of deglutition, US, US-guided FNAC, CT-guided FNAC or US-/CT-guided biopsy, dacryocystography or fistulography

COMPETENCES AND ATTITUDES

- To require no supervision from senior colleagues in the routine head and neck imaging workflow
- To confidently select the optimal imaging method for imaging disorders of the head and neck according to the clinical problem and justify the use of diagnostic imaging examinations and/or interventional procedures
- To justify when and why a particular examination needs to be performed in the head and neck
- To choose the best-suited method to address specific clinical questions in head and neck radiology according to current guidelines

- To confidently communicate with the patient and to obtain informed consent prior to head and neck imaging
- To describe and explain the nature of potentially complex radiological tests / procedures in head and neck imaging to patients and, where necessary, clinical colleagues
- To choose the optimal protocols for radiographic, CT, MRI and hybrid imaging examinations of the head and neck
- To apply techniques to reduce exposure doses for CT, CBCT, video-fluoroscopy of deglutition, angiography and X-ray-guided procedures in head and neck imaging
- To create and apply protocols and standard operating procedures to reduce exposure doses for radiological examinations in head and neck radiology
- To supervise and teach technical staff to ensure that appropriate images are obtained for all radiological methods in head and neck radiology
- To judge the quality of imaging examinations in head and neck radiology and to devise strategies to maintain high quality standards
- To link clinical presentations and radiological findings in head and neck imaging with likely diagnosis or, at least, reasoned differential diagnoses
- To construct a concise, informative radiology report in head and neck imaging with, where appropriate, recommendations for further radiological tests
- To confidently interpret and report radiographic CT, MRI and hybrid imaging examinations of the head and neck
- To discuss radiological findings in otorhinolaryngology with referring physicians at peer level
- To confidently lead the radiological aspects of multidisciplinary team meetings in head and neck imaging
- To be able to discuss both routine and more complex head and neck imaging cases with radiology colleagues, referring clinicians and patients, also explaining the level of uncertainty of particular cases
- To appreciate and respect the roles and work of other non-medical personnel (including radiographers, nurses, support staff, secretaries etc.) in the head and neck imaging unit and communicate with them in a professional manner
- To actively and positively interact with the other specialists of the multidisciplinary head and neck team (such as ENT surgeons, audiologists, phoniatrists etc.), being an integrated member of the team in planning diagnostic studies, therapies and in outcome review
- To prioritise radiological workflow in head and neck imaging as based on clinical urgency

- To identify urgent and/or unexpected findings in imaging examinations of the head and neck and to communicate these timely and properly
- To identify complex cases in head and neck imaging, in which it is appropriate to obtain a second opinion for interpreting and reporting
- To retrieve current information on state-of-the art procedures in head and neck imaging such as guidelines from national and international societies
- To continuously keep abreast of the key recent publications in the field of head and neck medicine, pathology and radiology and applications of newer AI techniques
- To have audit and research skills in head and neck imaging
- To present findings and lecture at meetings relevant to head and neck imaging
- To teach head and neck imaging
- To participate in discussions with other staff regarding operational challenges and potential system solutions regarding the workflow and other aspects of the head and neck radiology service

The anatomic areas covered by head and neck radiology

1. The petrous bone, the skull base and cranial nerves
2. The orbit and visual pathways
3. The sinuses, the face and the deep spaces of the suprahyoid neck
4. The oral cavity, the pharynx and the larynx,
5. The neck, including lymph nodes and its vasculature and the deep spaces of the infrahyoid neck
6. The salivary glands
7. The mandible and temporomandibular joints
8. The thyroid gland and the parathyroid glands, the thoracic inlet and the brachial plexus

4. Examination structure

The examination takes place twice a year, once at the ESHNR Annual Meeting and once during ECR. The examination consists of a standardised written and oral component. Both parts have to be passed successfully, the written part with at least 67% (2/3) correct answers and the oral part needs at least 2 out of 3 well-solved cases.

Written examination

The written examination will be run using a combination of different types of questions:

- 20 multiple choice questions with ≥ 4 answer options, 1 or more of the given answer options are correct. No negative marking for incorrect answers
- Normal/normal variant versus abnormal (2 answer options); if abnormal, the candidate has to write down the diagnosis (free text, no multiple-choice possibility). No negative marking for incorrect answers
- 6 pictorial/"annotate the structure" questions – the candidate has to write down the diagnosis/anatomic structure (free text, no multiple-choice possibility). No negative marking for incorrect answers
- 4 short cases with a combination of multiple-choice-questions and free text for the diagnosis. No negative marking for incorrect answers
- The exam lasts 60 minutes
- Candidates knowledge will be tested in all aspects relevant to head and neck radiology such as normal anatomy, imaging techniques and pathologic conditions involving the:
 - petrous bone, the skull base and cranial nerves,
 - orbit and visual pathways
 - sinuses, the face and the deep spaces of the suprahyoid neck
 - oral cavity, the pharynx and the larynx,
 - the neck, including lymph nodes and its vasculature and the deep spaces of the infrahyoid neck
 - the salivary glands
 - the mandible and temporomandibular joints
 - the thyroid gland and the parathyroid glands, the thoracic inlet and the brachial plexus

Oral examination

This consists of a 30-minute oral examination by head and neck imaging experts (nominated by the ESHNR Educational Committee) in the English language. The examiners are all experienced head and neck radiologists and diploma bearers. The examiners will show each candidate a series of 3 standardised cases (10 minutes per case is foreseen). The candidate is expected to be able to describe the relevant findings and discuss them with the examiners, provide a differential diagnosis and discuss possible treatment options or further diagnostic tests. The most important part of the oral examination is that the candidate shows that he/she is able to analyse the case appropriately and provide a suitable differential diagnosis.

A representative of the ESR may be present as an observer during the written and oral exam.

All candidates will be notified about the result at the earliest two weeks after the examination. Candidates who passed the examination successfully will receive the printed diploma certificate by regular post. Furthermore, as they become fellows of the ESHNR, they will also receive the ESHNR Fellowship Award. Official awarding and hand over are scheduled for the Gala Dinner during the next ESHNR Annual Meeting (might be subject to changes).

Online-only examination

In view of the Covid 19 situation, the examination will take place entirely online (via Zoom). All candidates are contacted prior to the exam and a “training session” takes place in order to familiarise them with the examination tools (screen sharing by the examiners, annotation possibilities by the examinees, etc.). As with the traditional examination, the standardised online-examination shall take place twice a year (once in spring and once in autumn, exact dates to be decided upon depending on the ongoing epidemiologic situation). Examiners are head and neck imaging experts (nominated by the ESHNR Educational Committee). The examination takes place in the English language.

The content and the degree of difficulty is the same as for the traditional written and oral examination. The online-only examination includes a 60-minute oral examination on various pathologies in the head and neck combining features of the traditional written and oral examinations as outlined above. In order to pass, the candidate needs to successfully solve 3 out of a total of 4 cases (a case is considered as failed if the candidate obtains <10/16 points, i.e., 62.5% of the maximum achievable points per case). In addition, he/she has to obtain an overall total score >52% of the total number of achievable points for all 4 cases together (i.e., >33/64 points), these points being based on pre-formulated questions regarding pathophysiology, treatment options, current guidelines, as well as on the knowledge, skills and competences shown by the examinee during the examination. As for the traditional examination, an observer is present throughout the examination in addition to the examiners.

Diploma renewal after five years

ESHNR will renew the European Diploma in Head and Neck Radiology every five years for full/corresponding radiologist members in good standing of ESHNR and ESR upon proof of at least 20 CME credits per year (equalling 100 CME credits in the past five years).

The ESHNR renewal guidelines in order to know how to obtain recognised head and neck CME credits are indicated on the webpage of the society.

5. Fee structure

Application fee for the diploma is set as following:

Full member: € 400.00

Corresponding member: € 400.00

If a candidate fails the European Diploma in Head and Neck Imaging, he/she has the opportunity to retake the examination. A reduced fee of € 200.00 will be granted for a re-examination.

Diploma renewal fee is set at € 30.00.

6. Terminology

Successful candidates will be awarded the European Board in Head and Neck Radiology Diploma. In addition, they become Fellows of the ESHNR.