



EUROPEAN SOCIETY OF NEURORADIOLOGY
Diagnostic and Interventional
ESONR – EUROPEAN SCHOOL OF NEURORADIOLOGY

GALEN Foundation Course in Neuroradiology

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The aim

The GALEN Foundation Courses have been designed to familiarise young radiologists with the established approaches and most recent achievements in diagnostic imaging, related to topics across the modalities. The courses are aimed *at residents in their first, second or third year of training in radiology and are primarily assigned to the geographic area of central and south-east Europe*. These courses are organized by the ESR – European Society of Radiology.

Each programme is structured in organ-oriented lecture series and interactive workshops offered by internationally renowned European faculties. All programmes have been specifically structured with the trainee radiologist in mind and are meant to deal with topics of practical importance and have an interactive character to encourage informal and free communication between participants and lecturers. The two day course programme consists of twelve lectures and nine workshops.

The GALEN Foundation Courses are implemented with the major support and partnership of GE Healthcare Medical Diagnostics South Central Europe.

For further details check the website: www.myESR.org/esor

From 2010 there will be a yearly **GALEN Foundation Course in Neuroradiology**, organized with the collaboration of ESNR – European Society of Neuroradiology.

The GALEN Foundation Course in Neuroradiology is not a prerequisite for ECNR.

Learning objectives

- to learn the CT and MRI findings of the most common cerebral pathologies
- to learn the role of a decision-making approach to selecting the best and most cost-effective imaging technique
- miscellaneous

1) *Cross-sectional anatomy of the brain revisited*

- to present an overview of neuro-anatomic landmarks in the brain using different cross-sectional imaging modalities (CT, MRI, US) and imaging planes (axial, coronal, sagittal, oblique)
- to understand the anatomy of motor, somato-sensory and special sensory (visual, auditory) systems on cross-sectional imaging methods, and to correlate this information with a patient's neurological symptoms
- to show how new imaging techniques (MDCT with volumetric reformations, DTI with fibre tracking, functional MRI) improve and enhance our knowledge of neuro-anatomy

2) *Stroke - diagnosis and therapy*

- to understand the pathophysiology of ischaemic and hemorrhagic stroke
- to be familiar with early CT signs of acute cerebral ischaemia and imaging findings on conventional MR sequences



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- to be knowledgeable about the usefulness of CT perfusion, CTA, diffusion-weighted MR imaging (DWI), MRA, and MR perfusion of ischaemic and hemorrhagic stroke
- to understand the relationship between the ischaemic penumbra, stroke therapy and patient outcome

3) *CNS and spine injuries*

- to identify and discuss imaging characteristics of common intracranial and spinal pathologies
- to understand imaging strategies considering cost-effectiveness
- to reflect on the impact of advanced imaging techniques in neuroradiological routine examinations

4) *CNS infectious diseases*

- to review the classification of brain infections
- to learn the imaging features of leptomeningitis, meningoencephalitis and pachymeningitis
- to understand the pathology and imaging patterns of brain abscesses
- to know the typical patterns of herpetic encephalitis and their differential diagnoses.
- to discuss the imaging classification of granulomatous inflammatory CNS diseases and parasitic infections
- to review the AIDS imaging patterns as modulated by current therapy

5) *CNS malignancies*

- to understand the traditional criteria for the detection and characterisation of intra-axial brain neoplasms
- to learn about the application of MR techniques including DWI, PWI, MRS for better delineation and characterisation of brain tumours
- to understand the role of neuroimaging for the differentiation of brain tumours from other non-neoplastic brain lesions

6) *White matter and neurodegenerative diseases*

- to understand the specificity of white and grey matter
- to understand the specificity of white matter and neurodegenerative diseases
- to learn the algorithm of neuroradiological studies
- to identify the different possibilities of CT, MRI and fMRI

7) *Vascular diseases and basics of neurointerventional procedures*

- to become familiarized with the currently available tools to acquire and process images in the setting of vascular CNS disease
- to learn the indications of neurointerventional procedures in the treatment of cerebrovascular diseases
- to understand where neurointerventional neuroradiology stands
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- to learn what can be achieved by endovascular techniques in the treatment of intracranial aneurysms, AVMs and AVFs of brain and spinal cord.

8) *Epilepsy*

- to understand the specificity of epilepsy
- to learn about the diagnostic possibilities of neurophysiological studies
- to learn about the possibilities of neuroradiology, CT, MRI and fMRI
- to learn about the possibilities of surgical treatments in epilepsy patients

9) *Degenerative diseases of the spine*

- to introduce the different imaging modalities for spine imaging
- to introduce the basic spinal imaging findings
- to provide basic information about the differential diagnosis
- to learn about the algorithm of spinal imaging
- to introduce the different percutaneous possibilities of minimally invasive treatments.

Course examination: at the end of the course there will be a self-assessment test consisting of multiple-choice questionnaires.

Frequency: The course will be held on a yearly basis as a two day course.

Location: The location varies; it will usually be located in central and south-east European countries