

Course Announcement Neuroimaging – 5th edition

E-learning Course

Course content

The course will cover the methodological basics of neuroimaging techniques and their application to the diagnostic work up and management of people with new onset or chronic epilepsy, adults and children. The course material will focus on the basic role of different imaging techniques for the diagnosis and management of epilepsy: in particular the role of MRI in temporal and in extratemporal lobe epilepsy; SPECT, PET and PET-CT in partial epilepsy with negative MRI; functional MRI in presurgical work up of pharmaco-resistant partial epilepsies.

Special attention will be given to practical aspects, including minimal standards for techniques, optimisation of neuroimaging requests and reports, common misconceptions (positive and negative) and potential pitfalls, specifically in the context of epilepsy, adults and children.

The course will include definitions and examples of the cerebral lesions involved in epilepsy and their functional impact, together with neuroanatomy tutorials to help with accurately localizing lesions in the brain. The course will discuss the sensitivity, specificity and prognostic value of imaging features, benign variants and artefacts, and the possible diagnostic significance of non epileptogenic lesions as well as maturational aspects.

Clinical cases will be presented to illustrate the role of each imaging modality for diagnosis, prognosis and management of epilepsy in adults and children, and to increase interactions between participants. Imaging material will be submitted exclusively by the teachers.

The course will address all aspects of neuroimaging techniques, extending from standard CT and MRI to presurgical work up including SPECT, PET, functional MRI and multimodality imaging, with their specific indications and requirements. Since this is a first basic course, intended to be relevant for day to day practice in average clinical circumstances, the emphasis will be on standard MRI and functional neuroimaging techniques most commonly used in pharmaco-resistant epilepsies.

However, some of the functional neuroimaging techniques are not available in many countries in the world, and some applicants may be mostly interested in MRI, considering that functional imaging is too far from their daily practice. Nevertheless, functional imaging provides highly useful data and is of a strong learning interest in the field of epilepsy. The 5th Neuroimaging course will therefore be divided in two parts, 1st part (mandatory) dedicated to MRI and one example of functional imaging technique (SPECT), 2nd part (optional **and only available if taking 1st part**) dedicated to the other functional imaging techniques (PET, functional MRI, multimodalities).

Basic practical knowledge of MRI (not only of CT) and a minimum of daily epilepsy practice are a prerequisite, as image analyzing techniques and clinical cases presented will only focus on epilepsy.

Course units

1st part (mandatory): Introduction to VIREPA platform, Introduction to the course & Basic MRI technology - anatomy, MRI in Temporal Lobe Epilepsies, MRI in ex Temporal Lobe Epilepsies, SPECT in negative MRI cases.

2nd part (optional and only available if taking 1st part): PET in negative MRI cases, fMRI, Neuroimaging: A multimodal approach.

Learning objectives

The course, on completion, will enable participants to improve the quality of the diagnostic approach in adults and children with new onset as well as chronic epilepsies. It will help to decide on the appropriate imaging study indicated for a specific clinical problem. It will improve the competence and confidence in the recognition, localization, and differentiation of epileptogenic lesions and functional impact of epilepsy as well as the understanding of the clinical significance of these two factors for diagnosis and management of epilepsy in adults and children.

Target group & entry criteria

The course will be pragmatic and aimed at the general neurologist / pediatric neurologist / pediatrician / radiologist dealing with - but not necessarily exclusively involved in - epilepsy care. Three years of training in neurology, neuropediatrics, clinical neurophysiology, psychiatry or neurosurgery, or combinations of these are required as entry criteria.

Course format

The **1st part** of the course is divided into 5 units, beginning with an introduction to the VIREPA e-learning platform, followed by 4 learning units of 3 weeks each and a final test for all course participants. The **optional 2nd part** of the course has another 3 learning units of 3 weeks each and again a final test offered to the participants to this part of the course. The learning material (textbooks and references) is available for download. To earn credits in each learning unit, tasks will be successfully completed within an active online communication process among all participants, guided by the experts in the discussion fora on the e-learning platform. These tasks help to deepen the theoretically gained knowledge from the learning material and enable to transfer this knowledge to the clinical practice of each learner.

The participants are expected to spend about 8 hours (~4 hours/week) for individual study of the learning material, for reading/writing contributions in the forum and for the completion of the tasks.

All tutors are currently practicing in their respective specialty field, moderating the distance courses in addition to their regular duties. This gives participants the unique opportunity to draw upon their expertise and practical experience even beyond the mere requirements of the course.

Course fee: 1st part of course is 500 Euro; 2nd part (optional **and only available if taking 1st part**) is 300 Euro. A restricted number of bursaries will be available. For participants living in countries with “low” and “lower middle” income, self payment for approved bursaries will be 125 Euro for only 1st part and 75 Euro for 2nd part of course. (See categories according to the statistics of the World Bank: <http://siteresources.worldbank.org/DATASTATISTICS/Resources/CLASS.XLS>)

Number of participants: up to 30

Course Directors

Prof. Catherine Chiron and Prof. William Gaillard

For questions, contact Priscilla Shisler (pshisler@ilae.org) at the ILAE Headquarter Office.

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