

## **The role of EEG in the Diagnosis and Management of Epilepsy** **- Basic course -**

### **Course content**

The course will cover the basic elements of the practice of EEG in its application to the diagnostic work up and the management of persons with suspected or already established epilepsy, adults and children. It will be practice oriented and aimed at the general neurologist / pediatric neurologist / pediatrician dealing with - but not exclusively involved in - epilepsy care. Subject material will emphasize the basic role of the (standard) EEG in the diagnosis and management of epilepsy, common misconceptions (positive and negative) and potential pitfalls. Attention will be given to practical aspects, including the set-up of an EEG lab, minimal standards, electrodes, montages, provocation methods and the optimisation of EEG requests and reports, specifically in the context of epilepsy.

Since a follow-up course, dealing specifically with pediatric EEG, including neonates, and epilepsy, is available no special attention is given to these subjects in this basic course. For pediatric neurologists without extensive basic EEG expertise, however, the current course is necessary to obtain the basic knowledge to be able to participate in the pediatric course.

Clinical aspects will include definitions of spike, spike and wave, sharp wave, etc., examples of various types of epileptiform activity, sensitivity, specificity and predictive value of specific EA patterns for diagnosis of epilepsy or specific epilepsy syndromes, the recognition of non epileptic sharp phenomena, benign variants & artifacts and the possible diagnostic significance of non specific EEG phenomena. Diagnostic significance of spontaneous or induced sleep will be dealt with but for more specific aspects of the interaction between epilepsy and sleep a separate follow up course will be available. Emphasis will be on standard EEG, including sleep and the regular provocation methods in adults and children. For those who successfully have participated in the basic course an advanced course will be available, addressing special short and long-term EEG and video monitoring studies, advanced computer assisted methods of viewing and reviewing the EEG and some specific aspects of EEG in the diagnosis of epileptic syndromes in adults and children and in the differential diagnosis of paroxysmal events in general

Some basic knowledge of EEG, both theoretical and practical, is a prerequisite since the technique of EEG recording and presentation and basic underlying neurophysiology will only be dealt with insofar as relevant for epilepsy.

### **Course units**

Introduction to the VIREPA platform; Introduction to the course; Basic technology I: Theoretical aspects; Basic technology II: Practical aspects; Interictal & Ictal EEG patterns I & II; Provocation Methods: Hyperventilation, Intermittent photic stimulation; Sleep; Differential diagnosis, Final Task.

### **Learning objectives**

Successful completion of the course will enable the participants to improve the quality of the diagnostic approach in adults and children with epilepsy or other suspected paroxysmal disorders in the EEG lab of their clinics. It will help them to decide on the specific type of study, indicated for specific clinical problems. It will improve their competence and confidence in the recognition and differentiation of epileptic and other phenomena in the adult and pediatric awake and sleep EEG and their understanding of the clinical significance of these phenomena for the diagnosis and differential diagnosis of epilepsy and epilepsy syndromes.

### **Target group**

The course is intended for neurologists, pediatric neurologists and pediatricians, dealing with patients with epilepsy, including the EEG studies of these patients.

### **Entry criteria**

- A minimum of 4 months of practical experience with clinical EEG is required as well as
- 3 years of training in neurology, neuropediatrics, clinical neurophysiology, psychiatry or neurosurgery, or combinations of these
- Must be able to contribute case histories and EEG samples as required for course tasks

### **Course format**

The course itself is divided into 9 units, beginning with a one week introduction to the VIREPA e-learning platform, followed by 7 learning units of three weeks each and a final task unit. Additional educational material (textbooks and references) required for this course is available for downloading from the course's server repositories. 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 the participant to transfer this knowledge to his/her daily clinical practice. The participants are expected to spend about 8 hours per unit (~2,5-3 hours/week) on individual study of the learning material, for reading/submitting contributions to the course's virtual discussion forum and for the completion of the learning unit tasks, which includes the contribution of one's own case histories and EEG samples.

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 statutory requirements of the course.

**Course fee:** \$1080. 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 \$270. [See categories according to the statistics of the World Bank.](#)

### **Important for bursary applicants:**

1 a) Submission of a **letter of recommendation** from the bursary applicant's **current workplace or from the leadership of the local ILAE Chapter or Regional Commission** stating the expected benefit to the epilepsy care and development in the bursary applicant's community **specific to the VIREPA course** for which application is being made.

1 b) In case such evidence cannot be submitted, a **personal letter of motivation** is required

outlining the benefit the bursary candidate expects from his/her daily practice and professional career **specific to the VIREPA course** for which application is being made.

For questions, contact ILAE VIREPA staff at [ilaeacademy@ilae.org](mailto:ilaeacademy@ilae.org).

Please note that this **requirement is mandatory** and is an important part of the decision-making process for the granting of any bursary.

It is also wise to note that dropping out of a course or having limited participation in one, may impact future decisions about bursary eligibility.

**Number of participants:** up to 30

**Course Directors**

Dr. Elena Gardella and Dr. Bogdan Lorber

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