

Atlas of EEG Report

(With CD)

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Introduction

Electroencephalography (EEG) is the recording of the electrical activity of the brain. EEG is a reliable test to assess cerebral function. It aids in diagnosis, classification, and management of patients with epilepsy. It has practical uses in conditions other than epilepsy as well. Moreover, it is harmless and inexpensive.

EEG is an important tool in evaluating patients with epilepsy. When combined with the history and neurological examination, the interictal EEG helps confirm the diagnosis of an epilepsy syndrome. For example, in a child with focal motor seizure of the face, the interictal EEG helps confirm a diagnosis of benign Rolandic epilepsy of childhood; in the appropriate clinical setting, a 3-Hz generalized spike-and-wave burst confirms a diagnosis of idiopathic generalized epilepsy. Likewise, the ictal EEG may help classify the syndrome, identify the likely source of focal

seizures, and confirm a diagnosis of status epilepticus. EEG is therefore helpful in selection of appropriate antiepileptic drugs for the patients with epilepsy, is valuable in making the diagnosis and management of status epilepticus, prediction of prognosis in epilepsy syndromes and, finally, localization of an area for resection in surgery candidates. In addition, despite advances in neuroimaging, EEG remains a valuable tool in the evaluation of stuporous and comatose patients. The EEG may indicate that the alteration of consciousness is the result of

- Diffuse cerebral dysfunction (e.g., due to hepatic encephalopathy, renal failure or drug intoxication).
- Continued epileptic activity without convulsive movements (non-convulsive status epilepticus).

A systematic approach is essential for EEG interpretation, and when combined with good clinical judgment, will improve diagnostic sensitivity and specificity and improve therapeutic outcomes. The EEG report is the reflection of such an approach and clinical judgment. It is of utmost importance to describe the findings as clearly and precisely as possible, so that another neurologist

would reach to the same conclusion as we did. It is equally important to write the conclusion and clinical correlation as specifically as possible and in a way that is understandable for non-neurologists. Prior to reviewing the EEG, the age of the patient, the reason for the study, the state of the patient, medications, and technical issues must be known. Many find it advisable to limit the knowledge of the clinical history before starting the review of the EEG to avoid introducing bias in the interpretation; one can always examine the recording a second time after learning about the suspected clinical diagnosis. An abnormality in the EEG should only be reported if it is unequivocal. Both over-interpretation and under-interpretation of the EEG are best avoided.

This book is designed as a practical guide for neurology residents, neurologists and epileptologists. It takes a fundamentally different approach than other texts and aims to serve as a practical, problem-oriented reference. The accompanying CD, which is designed as an atlas, is an illustrated material designed as a practical tool for neurologists and epileptologists so that they may appropriately identify normal and abnormal

findings, while reading an EEG. The chapters are organized in a way that the reader can easily review relevant information. By reading and reviewing the relevant chapter of this well-organized book, that includes many EEG pictures, the reader will learn how to report an EEG.

This book is a clinical guide to interpreting EEG findings and preparing a professional report for the EEG. This illustrated book, which will include a PowerPoint slide presentation (the accompanying CD), shows many pictures to facilitate the understanding and learning process. The book will provide the material to correctly interpret each and all EEG abnormality (along with the pictures to illustrate the abnormality) as a guide to the readers, and then help them write the report appropriately and professionally. The PowerPoint slide presentation includes the descriptions of EEG findings and also plenty of slides to show the designated findings over and over again.

We hope that this text fills an unmet need, and leads to improved patient care.

Note: All the EEG slides and pictures are either from

our own database or derived from our previous publication (Asadi-Pooya AA, Dlugos D, Skidmore C, Sperling MR. Atlas of Electroencephalography Patterns. 2008, Thomas Jefferson University Publications, Philadelphia, USA).

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