



Guidelines

Standardized computer-based organized reporting of EEG: SCORE – Second version



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See Editorial, pages 2330–2331

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HIGHLIGHTS

- A revised terminology for SCORE has been developed by an IFCN taskforce.
- It has been implemented in a software tested in clinical practice on 12,160 EEGs.
- This paper summarizes the revised SCORE terminology and describes its use.

ABSTRACT

Standardized terminology for computer-based assessment and reporting of EEG has been previously developed in Europe. The International Federation of Clinical Neurophysiology established a taskforce in 2013 to develop this further, and to reach international consensus. This work resulted in the second, revised version of SCORE (Standardized Computer-based Organized Reporting of EEG), which is presented in this paper. The revised terminology was implemented in a software package (SCORE EEG), which was tested in clinical practice on 12,160 EEG recordings. Standardized terms implemented in SCORE are used to report the features of clinical relevance, extracted while assessing the EEGs. Selection of the terms is context sensitive: initial choices determine the subsequently presented sets of additional choices. This process automatically generates a report and feeds these features into a database. In the end, the diagnostic significance is scored, using a standardized list of terms. SCORE has specific modules for scoring seizures (including seizure semiology and ictal EEG patterns), neonatal recordings (including features specific for this age group), and for Critical Care EEG Terminology. SCORE is a useful clinical tool, with potential impact on clinical care, quality assurance, data-sharing, research and education.

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Contents

1. Introduction	2335
2. Patient information and referral	2336
3. Recording conditions	2337
4. Modulators and procedures	2337
5. Findings	2337
6. Background activity	2337
7. Sleep and drowsiness	2338
8. Interictal findings	2338
9. Rhythmic or periodic patterns in critically ill patients (RPPs)	2339
10. Episodes	2339
11. Physiologic patterns and patterns of uncertain significance	2340
12. EEG artifacts	2340
13. Polygraphic channels	2340
14. Trend analysis	2340
15. Diagnostic significance	2341
16. The neonatal template	2341
17. Generating the report	2342
18. Follow-up diagnoses for longitudinal studies	2343
19. The SCORE EEG software	2343
20. Conclusion and Future perspectives	2344
Acknowledgements	2346
Declaration of interest	2346
Appendix A. Supplementary material	2346
References	2346

1. Introduction

The combination of clinically relevant signal features in an EEG recording is huge. This wide variety is typically described in free text EEG-reports. Although the International Federation of Clinical Neurophysiology (IFCN) published a glossary of terms for describing EEGs, the free-text format allows deviations from the standardized terminology. In practice, a wide variety of local terminologies flourish, where the same term is used with different meanings in different centers, and the same feature is described by different terms in different centers. This potentially contributes to the low inter-rater agreement previously described for EEG (van Donselaar et al., 1992; Stroink et al., 2006). However, when elec-

troencephalographers have to assess specific EEG-features by choosing from a list of pre-defined terms, the inter-observer agreement is higher (Stroink et al., 2006; Gerber et al., 2008; Gaspard et al., 2014).

EEG remains the most important clinical tool for functional assessment of the central nervous system, being widely used as an essential element in the diagnostic workup of patients with epilepsy, critically ill patients, as well as patients with altered mental status and cognitive changes. Misinterpretation of EEG can affect a huge number of patients worldwide. Thus, there is a need to find computerized tools to improve the quality of EEG assessment and reporting in clinical practice, and to improve education in EEG.

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