

Canadian Society of Clinical Neurophysiologists (CSCN) EEG Examination 2024 READING LIST*

INTRODUCTION

This reading list was prepared by the Chief Examiner with input from other experienced CSCN EEG examiners. The list was prepared to assist candidates in their preparation for the CSCN EEG examination. This list is not intended to be all inclusive and a quick perusal will reveal overlap or duplication of some topics. It is not the intention of the Examination Board to promote or exclude specific references and the following are put forward only as potentially useful sources of information. You may wish to use this reading list in conjunction with the CSCN EEG Examination Board "Outline of Content" topics document.

EEG STANDARDS AND GUIDELINES

(Note: Candidates are strongly encouraged to review the published guidelines listed below).

- Update on Minimal Standards for Electroencephalography in Canada: A Review by the Canadian Society of Clinical Neurophysiologists. 2017 Guidelines. Can J Neurol Sci Volume 44, Issue 6, November 2017, pp. 631-642.
DOI : <https://doi.org/10.1017/cjn.2017.217>
- Guidelines for Visual-Sensitive EEG Testing. Can J Neurol Sci Volume 35, Issue 2, May 2008, pp. 133-135.
DOI: <https://doi.org/10.1017/S0317167100008532>
- International Organization of Societies for Electrophysiological Technology. Guidelines for Digital EEG. Am. J. END Technol 39:278-288, 1999, pp 278-288.
DOI: <https://doi.org/10.1080/1086508X.1999.11079271>
- American Clinical Neurophysiology Society Guidelines 1 to 7. J Clin Neurophysiol 33(4): 303-332, 2016:
 - o American Clinical Neurophysiology Society Guideline 1: Minimum Technical Requirements for Performing Clinical Electroencephalography. Journal of Clinical Neurophysiology, August 2016, 33(4): pp. 303-307.
DOI: [10.1097/WNP.0000000000000308](https://doi.org/10.1097/WNP.0000000000000308)
 - o American Clinical Neurophysiology Society Guideline 2: Guidelines for Standard Electrode Position Nomenclature. Journal of Clinical Neurophysiology, August 2016, 33(4): pp. 308-311.
DOI: [10.1097/WNP.0000000000000316](https://doi.org/10.1097/WNP.0000000000000316)
 - o American Clinical Neurophysiology Society Guideline 3: A Proposal for Standard Montages to Be Used in Clinical EEG. Journal of Clinical Neurophysiology, August 2016, 33(4): pp. 312-316.
DOI: [10.1097/WNP.0000000000000317](https://doi.org/10.1097/WNP.0000000000000317)

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- o American Clinical Neurophysiology Society Guideline 4: Recording Clinical EEG on Digital Media. Journal of Clinical Neurophysiology, August 2016, 33(4): pp. 317-319.
DOI: [10.1097/WNP.0000000000000318](https://doi.org/10.1097/WNP.0000000000000318)
- o American Clinical Neurophysiology Society Guideline 5: Minimum Technical Standards for Pediatric Electroencephalography. Journal of Clinical Neurophysiology, August 2016, 33(4): pp. 320-323.
DOI: [10.1097/WNP.0000000000000321](https://doi.org/10.1097/WNP.0000000000000321)
- o American Clinical Neurophysiology Society Guideline 6: Minimum Technical Standards for EEG Recording in Suspected Cerebral Death. Journal of Clinical Neurophysiology, August 2016, 33(4): pp. 324-327.
DOI: [10.1097/WNP.0000000000000322](https://doi.org/10.1097/WNP.0000000000000322)
- o American Clinical Neurophysiology Society Guideline 7: Guidelines for EEG Reporting. Journal of Clinical Neurophysiology, August 2016, 33(4): pp. 328-332.
DOI: [10.1097/WNP.0000000000000319](https://doi.org/10.1097/WNP.0000000000000319)
- American Clinical Neurophysiology Society's Standardized Critical Care EEG Terminology: 2021 Version. J Clin Neurophysiol. 2021 Jan 1; 38(1):1-29.
DOI: [10.1097/WNP.0000000000000806](https://doi.org/10.1097/WNP.0000000000000806)
 - o **Comment:** *The most recent nomenclature of ICU EEG patterns. Older terms are still useful for many EEGers and will be accepted for the EEG exam in free-text answers, however examinees will be expected to know the newest ACNS terminology and may be examined specifically on it.*
- American Clinical Neurophysiology Society Critical Care Monitoring Committee. American clinical neurophysiology society standardized EEG terminology and categorization for the description of continuous EEG monitoring in neonates: report of the American Clinical Neurophysiology Society critical care monitoring committee. J Clin Neurophysiol. 2013 Apr;30(2):161-73.
DOI: [10.1097/WNP.0b013e3182872b24](https://doi.org/10.1097/WNP.0b013e3182872b24)
- Critical Care Continuous EEG Task Force of the American Clinical Neurophysiology Society. Consensus Statement on Continuous EEG in Critically Ill Adults and Children, Part I: Indications. J Clin Neurophysiol. 2015 Apr; 32(2):87-95.
- Critical Care Continuous EEG Task Force of the American Clinical Neurophysiology Society. Consensus Statement on Continuous EEG in Critically Ill Adults and Children, Part II: Personnel, Technical Specifications, and Clinical Practice. J Clin Neurophysiol. 2015 Apr; 32(2):96-108.
- The American Clinical Neurophysiology Society's Guideline on Continuous Electroencephalography Monitoring in Neonates. J Clin Neurophysiol. 2011 Dec; 28(6):611-7.
- Alvarez V et al. Clinical use of EEG in the ICU: technical settings. J Clin Neurophysiol 32: 481–485, 2015.

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- ILAE Classification of the Epilepsies: Position Paper of the ILAE Commission for Classification and Terminology. *Epilepsia*. 2017. *J Clin Neurophysiol* Apr; 58(4):512-521.
- The Role of EEG in the Diagnosis and Classification of the Epilepsy Syndromes: A Tool for Clinical Practice by the ILAE Neurophysiology Task Force (Part 1). *Epileptic Disord*. 2017 Sep 1; 19(3):233-298.
- The Role of EEG in the Diagnosis and Classification of the Epilepsy Syndromes: A Tool for Clinical Practice by the ILAE Neurophysiology Task Force (Part 2). *Epileptic Disord*. 2017 Dec 1; 19(4):385-437.

EEG TECHNOLOGY

TEXTBOOKS

- Fundamentals of EEG Technology. Tyner FS et al. Volume 1. Lippincott, Williams, and Wilkins, 1983.
 - **Comment:** *An excellent general EEG technology text BUT NOT useful for important DIGITAL EEG technical aspects (see other references, below)*
- Fisch and Spehlmann's EEG Primer: Basic Principles of Digital and Analog EEG. Bruce Fisch. Elsevier. 1999. Chapter 3 "Digital and analog EEG instruments: parts and functions," pp. 35-72.
 - **Comment:** *This chapter, and particularly the sections on analog-to-digital conversion and digital filters, is particularly well written.*

REVIEW PAPERS AND BOOK CHAPTERS

- Lagerlund TD. Digital Signal Processing: Digitization, Averaging, Filters, and Time Frequency Domain Analysis. Chapter 58, pp 1033-50. In: *Clinical Neurophysiology, Fifth Edition*. (ed. DI Rubin). Contemporary Neurology Series Volume 95. Oxford University Press, 2021.
- Lagerlund TD et al. Electrical Safety. Chapter 59, pp 1051-62. In: *Clinical Neurophysiology, Fifth Edition*. (ed. DI Rubin). Contemporary Neurology Series Volume 95. Oxford University Press, 2021.
- Lesser RF et al. An introduction to the basic concepts of polarity and localization. *J Clin Neurophysiol* 2 (1): 45-61, 1985.
- Knott JR. Further thoughts on polarity, montages and localization. *J Clin Neurophysiol* 2 (1): 63-75, 1985.
- Misulis KE. Basic electronics for clinical neurophysiology. *J Clin Neurophysiol* 6(1): 41-74, 1989.
- Epstein CM. Digital EEG: Trouble in paradise? *J Clin Neurophysiol* 2006; 23(3) 190-193.

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- Seneviratne U. Rational manipulation of digital EEG: pearls and pitfalls. J Clin Neurophysiol 2014;31: 507–516, 2014.

PHYSIOLOGY

- Rubin DI. Basics of Neurophysiology. Chapter 1, pp 9-39. In: Clinical Neurophysiology, Fifth Edition. (ed. DI Rubin). Contemporary Neurology Series Volume 95. Oxford University Press, 2021.
- Lagerlund TD et al. Volume Conduction in Clinical Neurophysiology. Chapter 56, pp 1001-18. In: Clinical Neurophysiology, Fifth Edition. (ed. DI Rubin). Contemporary Neurology Series Volume 95. Oxford University Press, 2021.
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- Badawy RA et al. Cortical hyperexcitability and epileptogenesis: understanding the mechanisms of epilepsy – Part 1. J Clin Neurosci. 2009 Mar; 16(3):355-65.
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- Blumenfeld H. Cellular and network mechanisms of spike-wave seizures. Epilepsia 46 (suppl 9, 2005): 21-33.
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EEG CLINICAL

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- Jankel WR et al. Sleep spindles. J Clin Neurophysiol 1985; 1(1):135.
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- Guerrini R et al. Encephalopathies with myoclonic seizures in infants and children (severe myoclonic epilepsy and myoclonic-astatic epilepsy). J Clin Neurophysiol 2003; 20(6): 462-472.
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EEG REFERENCE TEXTBOOKS AND ATLASES

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- Current Practice of Clinical Electroencephalography. Husain AM et al. 5th Edition. Wolters Kluwer, 2023
- Niedermeyer's Electroencephalography: Basic Principles, Clinical Applications, and Related Fields. Shomer DL et al. Lippincott, Williams, and Wilkins, 2018
- Practical Guide for Clinical Neurophysiologic Testing: EEG. Yamada T et al. Second edition. Wolters Kluwer, 2017.
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- Atlas of Neonatal Electroencephalography. Kellaway P et al. Third Edition. Lippincott, Williams, and Wilkins, 2003
- Atlas of EEG in Critical Care. Hirsch L et al. First Edition. Wiley-Blackwell, 2010.