INTERNATIONAL QEEG CERTIFICATION BOARD

2023 Blueprint of Knowledge for Board Certification in QEEG

(A Study Guide Will Also Be Available)

Areas of competency required for certification in Quantitative Electroencephalography and Electrophysiology:

I. HISTORY - 1 HOUR

Basic knowledge of the history of quantitative electrophysiology.

II. NEUROSCIENCE - 8 HOURS

The following areas will be covered in the formal examination and it is recommended that the candidate review readings that encompass the following:

A. Cortical and sub cortical structures macro and microanatomy
B. Sensory pathways
C. Autonomic nervous system
D. Major networks
E. Behavioral correlates to brain regions and networks

III. TECHNICAL - 4 HOURS

The competent clinical neurophysiologist must acquire knowledge of electronics and instrumentation related to EEG and EPs.

A. Topographical representation of EEG
B. Electrodes and acquisition systems
C. Instrumentation (Acquisition and review parameters/settings)
D. Montages
E. Electrical/clinical safety

IV. EEG - 8 HOURS

Fundamentals of functional neuroanatomy, including network theories, neurochemistry, neuropharmacology and neuropathology

A. Basic knowledge of neurophysiology of EEG
B. Editing and identifying artifacts
C. Normal waveform patterns
D. Standards of EEG acquisition procedures including activation
E. Abnormal EEG waveforms and rhythms. Visual examination of EEG traces to identify time and location of artifact and pathology
F. The use of different EEG montages for wave form analysis

V. QEEG - 9 HOURS

A. Understanding the uniqueness of QEEG analysis from other neuro imaging techniques and conventional metrics derived from the EEG signal
B. Use of QEEG norms and methods used to derive QEEG norms
C. The functional correlates of abnormal EEG changes
D. The role of the qEEG metrics toward understanding and treating specific clinical presentations; and the relationship of the qEEG to other clinical examinations.
E. Demonstrate basic knowledge of Brodmann Areas in terms of how Areas were defined and most common functional attributes to these regions
F. Demonstrate knowledge of networks and connectivity and definitions of terms
G. Demonstrate knowledge of Current Source Density maps, metrics, and graphic methods of such (e.g., methods voxel representation of current course methods)
H. Reports based on QEEG metrics should relate these to clinical history, symptoms and other clinical assessments.

VI. PSYCHOPHARMACOLOGY - 2 HOURS

Potential effects of prescribed and non-prescribed drugs on clinical presentation, potential effects of prescribed and non-prescribed drugs on EEG measure, potential effects of different drugs on learning tasks.

A. Relationships of drugs and neurotransmitter modulation
B. Understanding of basic principles of half-lives and impact on interpreting QEEG Guidelines for the evaluation of drug effects on brain and behavior in individual patients
C. Understand the effects of common psychopharmaceutical agent classes on EEG/QEEG data

VII. RESEARCH - 2 HOURS

Knowledge of Experimental Research designs and practice. The purpose is to facilitate research in the field of electrophysiology and to help evaluate published data for purposes of adaptation to clinical practice.

A. Basic vs. Clinical Research
B. Exploratory research vs. hypothesis testing
C. Experimental Design
D. Basic Statistics and differences between parametric versus nonparametric statistics
E. Definition of types of Validation and Reliability
F. Meta-Analysis
G. Reporting results and Publication Standards

VIII. ETHICS - 2 HOURS

Responsibilities and liability in provision of services.

IX. CLINICAL PRACTICE/FORENSIC - 4 HOURS

A. Knowledge regarding limits of interpreting QEEG regarding choice of reference databases and -recognizing statistical probability versus clinical probability
B. Recognizing the difference in deposition as “fact/treating” witness vs “expert” witness
C. Understand Daubert vs Frye standards and their application to QEEG interpretation and use
D. Emphasis of correlating QEEG with other clinical diagnostic evidence
E. Appropriateness of a QEEG referral
F. Patient conditions related to QEEG evaluation
G. History and prior clinical and laboratory reports review