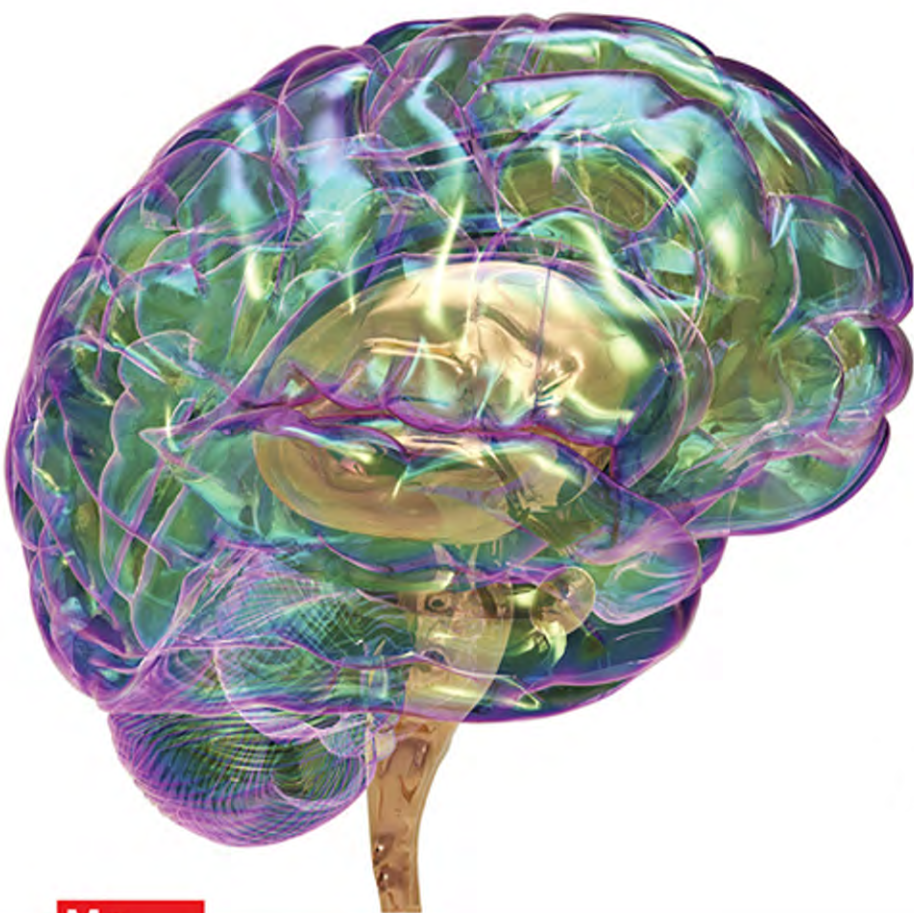


FIRST AID FOR
THE®

NEUROLOGY BOARDS

SECOND EDITION



Concise summaries of high-yield topics provide a complete review

Integrated cases and key facts improve exam-day recall

Proven strategies for passing the **ABPN exam**

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Education

Michael S. Rafii • Thomas I. Cochrane
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FIRST AID FOR
THE®

Neurology Boards

Second Edition

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DEDICATION

To the contributors to this and future editions, who took time to share their knowledge, insight, and humor for the benefit of residents and clinicians.

and

To our families, friends, and loved ones, who endured and assisted in the task of assembling this guide.

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Preface

With *First Aid for the Neurology Boards, Second Edition*, we hope to provide residents and clinicians with the most useful and up-to-date preparation guide for the American Board of Psychiatry and Neurology (ABPN) certification and recertification exams. This second edition represents an outstanding effort by a talented group of authors and includes the following:

- A practical exam preparation guide with resident-proven test-taking and study strategies
- Concise summaries of thousands of board-testable topics
- Hundreds of high-yield tables, diagrams, and illustrations
- Key facts in the margins highlighting “must know” information for the boards
- Mnemonics throughout, making learning memorable and fun

We invite you to share your thoughts and ideas to help us improve *First Aid for the Neurology Boards, Second Edition*. See How to Contribute, p. xiii.

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Thanks to our publisher, McGraw-Hill, for the valuable assistance of their staff. For enthusiasm, support, and commitment to this challenging project, thanks to our editor, Catherine Johnson. A special thanks to Rainbow Graphics for remarkable production work.

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How to Contribute

To continue to produce a high-yield review source for the ABPN exam, you are invited to submit any suggestions or corrections. Please send us your suggestions for

- Study and test-taking strategies for the ABPN
- New facts, mnemonics, diagrams, and illustrations
- Low-yield topics to remove

For each entry incorporated into the next edition, you will receive personal acknowledgment in the next edition. Diagrams, tables, partial entries, updates, corrections, and study hints are also appreciated, and significant contributions will be compensated at the discretion of the authors. Also let us know about material in this edition that you feel is low yield and should be deleted.

The preferred way to submit entries, suggestions, or corrections is via electronic mail. Please include name, address, institutional affiliation, phone number, and e-mail address (if different from the address of origin). If there are multiple entries, please consolidate into a single e-mail or file attachment. Please send submissions to:

firstaidteam@yahoo.com

NOTE TO CONTRIBUTORS

All entries become property of the authors and are subject to editing and reviewing. Please verify all data and spellings carefully. In the event that similar or duplicate entries are received, only the first entry received will be used. Include a reference to a standard textbook to facilitate verification of the fact. Please follow the style, punctuation, and format of this edition if possible.

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Guide to the ABPN Examination

Michael S. Rafii, M.D., PhD

Thomas I. Cochrane, MD, PhD

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KEY FACT

Most patients will be aware of your certification status. Many hospitals and potential employers insist on board certification as a condition of employment.

KEY FACT

Register before March to avoid the late fee.

For residents, the American Board of Psychiatry and Neurology (ABPN) certification exam is the culmination of 3 years of hard work. For practicing physicians, the exam is part of their maintenance of certification (MoC). The exam is challenging and expensive, but it is a meaningful indicator—to colleagues, patients, and their families—that you have the clinical knowledge and competence required to provide good clinical care. Patients typically are aware of a neurologist's board certification status. The pass rate for Part I in 2010 was 87%.

In this chapter we discuss the ABPN exam and provide you with proven approaches to conquering the exam. For a detailed and official description of the exam visit the ABPN web site at www.abpn.com and refer to the *Booklet of Information (ABPN Policies and Procedures)*.

ABPN—The Basics

HOW DO I REGISTER TO TAKE THE EXAM?

You can register online at www.abpn.com. The application fee in 2014 was \$700, and the examination fee \$1810. The regular registration deadline is typically in February of that year. If you miss the application deadline, a \$500 nonrefundable late fee is also tacked on. Check the ABPN web site for the latest registration deadlines, fees, and policies.

HOW IS THE ABPN TEST STRUCTURED?

The initial certification examination is a 1-day test, administered on computers at Pearson VUE testing centers (www.vue.com). It is composed of 2 sections: a morning session and an afternoon session. Both sessions are 3½ hours long, and there is a mandatory 1-hour break between the morning and afternoon sessions, totaling 8 hours for the entire examination.

The ABPN divides the test content into 3 groupings: Neurology A: Basic Neuroscience; Neurology B: Behavioral Neurology, Cognition, and Psychiatry; and Neurology C: Clinical Neurology. The subtopics in each of these categories are shown in Table 1.1. The content outlines can also be obtained at www.abpn.com/content_outlines.htm.

Morning Session

The morning session consists of 210 questions drawn from the Neurology A and Neurology B content outlines. Each item is a stand-alone multiple-choice question. You will have the opportunity to “flag” questions for review as you go and can return to difficult questions later.

Afternoon Session

The afternoon session consists of 210 questions derived from the Neurology C content outline and includes 60% adult neurology questions and 40% child neurology questions. Most questions in this section refer to case presentations. These may be presented in a 30- to 90-second video clip, or as a text vignette, with or without images (eg, CT, MRI, pathology). A single case may have 5 or 6 associated questions. Answers to already completed questions are sometimes revealed in subsequent questions, so you will not be able to flag items for review in the afternoon session.

TABLE 1.1. Initial Certification Examination Sections and Content

| |
|---|
| <p>Neurology A: Basic Neuroscience</p> <ul style="list-style-type: none"> I. Neuroanatomy II. Neuropathology III. Neurochemistry IV. Neurophysiology V. Neuroimmunology/neuroinfectious disease VI. Neurogenetics/molecular neurology, and neuroepidemiology VII. Neuroendocrinology VIII. Neuropharmacology |
| <p>Neurology B: Behavioral Neurology, Cognition, and Psychiatry</p> <ul style="list-style-type: none"> I. Development through the life cycle II. Behavioral and social sciences III. Diagnostic procedures IV. Clinical and therapeutic aspects of psychiatric disorders V. Clinical and therapeutic aspects of behavioral neurology |
| <p>Neurology C: Clinical Neurology (Adult and Child)</p> <ul style="list-style-type: none"> I. Headache disorders II. Pain disorders III. Epilepsy and episodic disorders IV. Sleep disorders V. Genetic disorders VI. Congenital disorders VII. Cerebrovascular disease VIII. Neuromuscular diseases (adult and child) IX. Cranial nerve palsies |

Scoring

Your score report will indicate your overall percentage of correct responses and the percentage of correct responses within each subtopic. Subtopic scores are provided primarily for your learning and information. Your overall score percentage of correct responses is what determines whether you pass or fail.

WHAT TYPES OF QUESTIONS ARE ASKED?

All questions are **single best answer**. Most questions on the exam are vignette based. You will be presented with a scenario, then a question followed by 5 options. Extraneous information is often included, and some questions can be answered without actually reading the case. Like other board exams, there is no penalty for guessing. Between 5% and 10% of the questions require interpretation of photomicrographs, radiology studies, photographs of physical findings, and the like. It is your job to determine which information is superfluous and which is pertinent to the case at hand.

CLINICAL EXAMINATION/ORAL BOARDS

If you entered neurology or child neurology residency **on or after July 1, 2005**, the clinical skills evaluations (previously conducted as the Part II exam-

KEY FACT

Most questions are case-based.

ination) now takes place during residency. These evaluations are performed at your home institution, and you will have to submit documentation of satisfactory performance in the 5 required clinical skills evaluations. These evaluations must be completed in an Accreditation Council for Graduate Medical Education (ACGME)-accredited training program and are required as part of the ABPN credentialing process.

As of 2010, the Part II examination was no longer required for first-time takers (there will no longer be a Part I and Part II).

THE RECERTIFICATION EXAM

The recertification exam is one part of the Maintenance of Certificate Program (MCP). This 200-item, multiple-choice examination is administered on computer for 5 hours. The exam fee in 2014 was \$1500. Historically, pass rates range from 92% to 100%.

TEST PREPARATION ADVICE

Candidate knowledge is assessed in headache and other pain syndromes; epilepsy; cerebrovascular disease; aging, dementia, and degenerative diseases; spinal cord and nerve root disorders; neuromuscular disorders; movement disorders; demyelinating disorders; critical care and trauma; neurology of systemic disease; neuro-ophthalmology/neuro-otology; neurogenetics/neuro-metabolic disorders; neuro-oncology; infectious diseases; cognitive neurology; neurologic disorders presenting with psychiatric symptoms; neurotoxicology; sleep disorders; ethics and professionalism; and neurorehabilitation.

The ABPN exam tends to focus on the diagnosis and management of diseases and conditions that you have seen during your training, so *First Aid* and a good source of practice questions may be all you need. But most residents should consider using *First Aid* as a **guide**. Like any review book, *First Aid* is not comprehensive, and should be supplemented by textbooks, practice questions with explanations, review articles, and a concise electronic text such as *UpToDate*. Original research articles are low yield, and very new research (ie, less than 1–2 years old) will not be tested. There are a number of high-quality board review courses offered around the country. Board review courses are expensive but can help those who need some focus and discipline.

The American Academy of Neurology (AAN) Residency In-service Training Exam (RITE) is a self-assessment tool designed to gauge knowledge of neurology and neuroscience, identify areas for potential growth, and provide references and discussions for each. This exam has been considered a very helpful tool in preparing for the Neurology Board examination.

Ideally, you should start your preparation early in your **last year of residency**, especially if you are starting a demanding job or fellowship right after residency. Cramming in the period between end of residency and the exam is **not advisable**.

For **common diseases**, learn both the common and **uncommon presentations**; for **uncommon diseases**, focus on the **classic presentations** and manifestations. Draw on the experiences of your residency training to anchor some of your learning. When you take the exam, you will realize that you've seen most of the clinical scenarios in your 3 years of wards, clinics, morning report, case conferences, or grand rounds.

Comprehensive understanding of a subject is by far the best way to perform well on a test, and translates directly into better real-world performance. But when preparing for a high-stakes test with limited preparation time, rote

KEY FACT

Use a combination of *First Aid*, textbooks, journal reviews, and practice questions such as the RITE exam.

memorization of high-yield facts can be a smart strategy. Know your own learning style—there is no single best way to prepare.

OTHER HIGH-YIELD AREAS

Focus on topic areas that are typically not emphasized during residency training but are board favorites. These include:

- Topics in outpatient specialties (eg, movement disorders, epilepsy, dementia, pediatric neurology, neuromuscular disease).
- Neuropathology and neuroradiology (eg, classic pathology of meningiomas, MRI of cortical tubers of tuberous sclerosis, angiogram of carotid dissection).
- Adverse effects of drugs.
- Anatomy of the peripheral nervous system. Memorize the brachial and lumbosacral plexuses (know the roots, trunks, cords, and nerve for each commonly tested muscle!). Getting this “down cold” just before the test won’t take long and will yield many free points on the exam.

TEST-TAKING ADVICE

You’ve probably taken so many tests by now that you need little advice from us. But under pressure, it’s easy to forget the basics. Here are a few tips to keep in mind when taking the exam:

- For long vignette questions, read the question stem and scan the options, **then** go back and read the case. You may get your answer without having to read through the whole case.
- There’s no penalty for guessing, so you should **never** leave a question blank.
- Pacing is key to getting through all the questions. Even though you have 2 minutes per question on average, you should aim for a pace of 90–100 seconds per question. If you don’t know the answer within a short period, make an educated guess and move on.
- In the morning session, make use of the option to flag questions for review. Take an educated guess, flag the question, and come back at the end if you have time.
- It’s okay to **second-guess** yourself. Contrary to popular wisdom, “second hunches” tend to be better than first guesses.
- Don’t panic over “impossible” questions—no one will get every question. Take your best guess and move on.
- Note the age and race of the patient in each clinical scenario. When ethnicity or race is given, it is often relevant. Know the associations between disease, sex, and race, especially for more common diagnoses.
- Eponyms are used rarely in the test—most questions simply describe clinical findings.

TESTING AND LICENSING AGENCIES

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CHAPTER 2

Neuroanatomy

Katherine B. Peters, MD, PhD

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