
Clinical Neuroanatomy: A Neurobehavioral Approach

by John E. Mendoza, PhD, and Anne L. Foundas, MD. Springer, New York, NY, 2008, 704 pages, \$99.00.

Clinical Neuroanatomy: A Neurobehavioral Approach bridges the knowledge base of neuropsychology and behavioral neurology, the 2 clinical specialties relating to cognitive neuroscience. The book appears to be written for neuropsychologists seeking neurologic and neuroanatomic correlations. Psychiatrists also look to both specialties for answers when their patients do not respond to treatment, fall outside the range of typical presentation, or develop psychiatric symptoms subsequent to neurologic impairment, and therefore psychiatrists will find this book equally as useful.

The text is organized along the lines of other clinical neuroanatomy texts—by level of the nervous system. But it differs from other texts in its emphasis on the functional significance of each area. Each chapter summarizes the gross and cellular anatomy, connections, functional correlates, symptoms, and syndromes relevant to that particular level of the central nervous system. The illustrations include a combination of gross anatomic photos, magnetic resonance images, and simplified drawings.

Some of the chapters stand out for the level of useful information included and could be outstanding references on their own. The detailed descriptions of cognitive assessment in the 3 chapters on the cerebral cortex, for example, will satisfy psychiatrists and allied mental health clinicians who want to understand how a neuropsychologist assesses cortical deficits while at the same time providing a large amount of anatomic, clinical, and localization data useful for all mental health practitioners. In many ways, these chapters on the cortex are the centerpiece of the work. Preceded by a brief and readable history of cerebral localization, the symptom and syndrome section includes excellent coverage of basic neurobehavioral syndromes, both subcortical disconnection- and cortical lesion-related. There is an outstanding discussion of handedness and dominance, and there is a discussion of the functional significance and differences among the different types of white matter pathways, not typically covered in anatomy texts.

A chapter on neurochemical transmission is also sufficiently comprehensive to serve as a freestanding text. After an introduction covering principles of neurotransmission, the authors present concise summaries of the anatomic distribution, modulation, behavioral ramifications, and role in disease of each of the major neurotransmitters. Paired with an appendix on neurophysiology that reviews ion gradients and genesis of action potentials, this chapter brings to the reader an excellent background for detailed study of psychopharmacology.

The authors make use of endnotes to provide context and amplification for readers seeking a broader understanding of concepts presented in each chapter. And they have taken a good deal of care to carefully define and differentiate terms both in the text and by means of a glossary containing concise definitions.

The knowledge base contained in this work, if acquired by mental health practitioners, would push the field toward a psychology or psychiatry that is more informed by clinical neuroscience and more able to apply cutting-edge theories and treatments for the benefit of our patients.

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