

investigation. Physicians must understand the tools available to supplement the basic neurological assessment, in order to select them appropriately and to evaluate properly the information they provide. In this context, this book serves a useful purpose and can be recommended to both physicians and neuropsychologists alike.

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TRAUMATIC HEAD INJURY IN CHILDREN. 1995. Edited by Sarah H. Broman, Mary Ellen Michel. Published by Oxford University Press – Canada. 299 pages. \$C65.00

This book evolved from a 1993 conference on head injury in childhood at the National Institute of Neurological Disorders and Stroke in Bethesda, Maryland. The purpose is to evaluate the current state of knowledge about consequences of traumatic head injury in childhood and to identify sources of variability in outcome found in studies of both severe and mild injury". This objective is achieved in 16 chapters.

The book is organized in 4 parts. Part I deals with key issues, including a developmental perspective on outcome, epidemiological features of brain injury in children, and pathophysiological responses of the child's brain following trauma. Part II, "The Data", has chapters on behavioural sequelae, neurobehavioural outcome, discourse as an outcome measure, the UCLA study of mild closed head injury, mild head injury in the British Birth Cohort, attention deficits after injury, and the role of the family in recovery from brain injury. Chapters in Part III are a twenty-three year followup study, lessons for the study of pediatric head injury outcome based on recovery of function in adults, evaluating efficacy of rehabilitation after pediatric traumatic brain injury, and the prospect of pediatric clinical trials. Part IV, "Commentary" includes implications for clinical care and cognitive neuroscience, and a summary of progress in recent years.

Several chapter authors point out the problems involved in doing outcome studies after head injuries in children. Studies need to be prospective, take into account the mechanism of injury, ensure adequate numbers of children of all ages (0 to 14 or 0 to 18?), clearly define when the Glasgow Coma Score or a pediatric modification are to be assessed, include information about the child's pre-morbid function, utilize standard imaging studies, and use assessment strategies that take into account the normal acquisition of skills as a child develops. The definition of mild head injury based only on the Glasgow Coma Score may need to be changed. Evidence in the literature suggests that a GCS of 13 may indicate a more severe injury than a GCS of 14 or 15. The quality of the studies included in this book is variable, the reader needs to critically evaluate the weighting given to each.

A strength of this book is pointing out new avenues to explore, such as the use of functional imaging methods, using models of intraindividual change, studying the processing of information, and looking at therapies such as hypothermia, dex-

tromethorphan and free radical scavengers. I recommend this book to pediatric neurologists and neurosurgeons, developmental pediatricians, child and adult psychiatrists, rehabilitation specialists, as well as psychologists and neuropsychologists. Despite the flaws in the studies, it is the best summation of the "state of the art" in pediatric head injury outcome information to date.

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THE NMDA RECEPTOR. 1994. SECOND EDITION. Edited by G.L. Collingridge and J.C. Watkins. Published by Oxford University Press. 503 pages. \$C80.95

Only one type of the four types of receptors activated by glutamate is covered in this book. This may seem rather specialized, and not all clinicians will rush out and buy this volume. But then, how is a clinician supposed to understand glycine encephalopathy, without some idea of how glycine acts in the nervous system, especially on the NMDA receptor? The chapters on the role of the NMDA receptor in learning and memory, epilepsy, and other arenas in the clinical sphere will attract the academic clinician in any area of clinical neuroscience. Fundamental insights into the actions of glycine, and glutamate, in both normal and pathophysiological situations are contained between the covers. Black holes in knowledge of excitatory amino acid action will result if the neuroscience researcher ignores this book. For example, D- and L-glutamate are an exception among enantiomeric pairs, in that they are roughly equally potent at the NMDA receptor. The relatively low toxicity of naturally occurring glutamate or aspartate versus their N-methylated and other congeners is not explained by receptor-ligand interaction, but by lack of uptake of the artificial ligands by the axonal high affinity glutamate uptake system. The regenerative, self-sustaining, or "run-away" positive feedback depolarization of the NMDA receptor is explained at several points in the book. As a reference work for those working in any field related to EAA and NMDA receptors, this book is invaluable. Much of the history of the field of excitatory amino acids is contained within this book. I recommend it to the neuroscience researcher, as well as the clinician who wishes to have a reference work on the NMDA receptor on the bookshelf.

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PEDIATRIC CLINICAL ELECTROMYOGRAPHY. 1996. By H. Royden Jones, Jr., Charles F. Bolton and C. Michel Harper, Jr. Published by Lippincott-Raven. 487 pages. \$C127.00

This is a book for electromyographers investigating pediatric neuromuscular patients. Basic knowledge is assumed and electrode and needle sites and techniques are not repeated. Added tips are given for approach to the infant and child where cooperation and short inter-electrode distances are limiting factors in procedure duration and test reliability. Tables comprising age controlled, normative data from different authors for motor and sensory responses, F waves, H reflexes, blink reflexes, phrenic