**Epilepsy and Intellectual Disabilities**

This second edition of a successful book provides updated clinical and research knowledge, including information on the licensing of new antiepileptic drugs. All chapters are updated to reflect present accepted practice. New chapters highlighting the importance of the genetic aspects of epilepsy, nonpharmacological treatments, and the impact of epilepsy on families and carers have been added.

Ongoing developments in the general population, which will more likely than not become relevant to the intellectually disabled population, are discussed. The impact of epilepsy on the person themselves and their carers is acknowledged, and person-centred treatment programs with a multifaceted team approach are proposed. This book is aimed at physicians and residents in neurology and pediatrics, as well as other practitioners working with this population, such as neuropsychologists.

Epilepsy and Intellectual Disabilities, Second Edition is recommended reading for all those caring for this important group of individuals.

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**Astrocytes and Epilepsy**

Epilepsy is a devastating group of neurological disorders characterized by periodic and unpredictable seizure activity in the brain. There is a critical need for new drugs and approaches given than at least one-third of all epilepsy patients are not made free of seizures by existing medications and become "medically refractory". Much of epilepsy research has focused on neuronal therapeutic targets, but current antiepileptic drugs often cause severe cognitive, developmental, and behavioral side effects.

Recent findings indicate a critical contribution of astrocytes, star-shaped glial cells in the brain, to neuronal and network excitability and seizure activity. Furthermore, many important cellular and molecular changes occur in astrocytes in epileptic tissue in both humans and animal models of epilepsy. The goal of Astrocytes and Epilepsy is to comprehensively review exciting findings linking changes in astrocytes to functional changes responsible for epilepsy for the first time in book format.

These insights into astrocyte contribution to seizure susceptibility indicate that astrocytes may represent an important new therapeutic target in the control of epilepsy. Astrocytes and Epilepsy includes background explanatory text on astrocyte morphology and physiology, epilepsy models and syndromes, and evidence from both human tissue studies and animal models linking functional changes in astrocytes to epilepsy.

Beautifully labelled diagrams are presented and relevant figures from the literature are reproduced to elucidate key findings and concepts in this rapidly emerging field.
**Controversies in Caring for Women with Epilepsy**

This text presents difficult management issues surrounding women with epilepsy in a unique format. The Editors provide several controversial cases in adolescence, pregnancy, and menopause with invited experts offering their differing opinions. The Editors compare the clinical approaches and build a consensus based on the best available evidence.

Professionals charged with managing this challenging patient group will be given insights on providing the best possible care based on current available data and expert opinion.

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**Wireless Power Transfer and Data Communication for Neural Implants**

This book presents new circuits and systems for implantable biomedical applications targeting neural recording. The authors describe a system design adapted to conform to the requirements of an epilepsy monitoring system. Throughout the book, these requirements are reflected in terms of implant size, power consumption, and data rate.

In addition to theoretical background which explains the relevant technical challenges, the authors provide practical, step-by-step solutions to these problems. Readers will gain understanding of the numerical values in such a system, enabling projections for feasibility of new projects.

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**Epilepsy: Biology of Spectrum Disorder**

Epilepsy is due to abnormal signaling of neurons in the brain that can cause seizures. It is a common condition, affecting at least 3% of individuals at some point during their life. The seizures are difficult to predict and, in a significant fraction of patients, refractory to current medical interventions.

Written and edited by experts in the field, this collection from Cold Spring Harbor Perspectives in Medicine includes contributions covering all aspects of epilepsy, its causes, pathophysiology, clinical characteristics, comorbidities, and treatment. Contributors discuss the genetic, developmental, and environmental triggers of recurrent seizures; molecular changes (e.g., epigenetic modifications) that are associated with epileptogenesis; and the aberrant ion channels and neuronal networks involved. Clinical aspects of the disease (diagnosis, classification, and treatments) are reviewed, as are common comorbidities (e.g., depression and cognitive disorders).

Recent advances in drug development and surgical techniques aimed at reducing the morbidity and mortality of patients with epilepsy are also described. The authors highlight current challenges in the field of epilepsy, with the goal of assisting others in formulating relevant research questions. This volume is therefore a vital reference not only for scientists and clinicians currently working in the field, but for all neuroscientists seeking to explore new research directions.

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**Neurobiology of Epilepsy: From Genes to Networks**

Neurobiology of Epilepsy: From Genes to Networks is the latest volume in the Progress in Brain Research series that focuses on new trends and developments. This established international series examines major areas of basic and clinical research within the neurosciences, as well as popular and emerging subfields.