

Preface

For the past centuries, scientists have worked hard to understand the development of the cerebellum and its disorders. Cerebellar neurodevelopmental disorders are impairments of the growth and development of the cerebellum that result in birth defects that may have a severe impact on patients' lives. A narrower use of the term refers to a disorder that unfolds during individual development to affect motor function, emotion, learning ability, self-control, and memory. Knowledge obtained from advanced neuroimaging techniques and from molecular and genetic studies has provided rapidly growing evidence that the cerebellum is a brain region that is highly impacted by developmental defects.

Advanced technologies for research have changed our views of cerebellar development. This has led us to identify many of the biological, genetic, and environmental factors that contribute to the development and progression of cerebellar disorders. We believe that basic knowledge of the cerebellum, one of the most complex structures in the brain, will empower cerebellar researchers, neuroscientists, neurologists, and neurosurgeons every day.

This book covers diverse aspects of cerebellar development from different points of view including the epidemiology of cerebellar genetic disorders, developmental anatomy, cell biology, genetics, epigenetics, infectious diseases, and mechanisms involved in regulation of cell fate, while focusing on information that is relevant to clinicians serving patients with cerebellar disorders. This book consists of chapters written by experts in the field of cerebellar development, and it covers diseases related to the cerebellum, along with their epidemiology, clinical features, assessment, and management. To the extent that the book is a useful reference for neuroscientists and clinicians, we will have succeeded.

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to Diseases

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