

FOREWORD

More individuals are diagnosed with an autism spectrum disorder (ASD) today than ever before. The term ASD encompasses conditions previously referred to as autistic disorder, Asperger's syndrome, or pervasive developmental disorder not otherwise specified. The severity of ASD varies from mild to severe, and individuals with ASD differ significantly in the features they present. However, the core symptoms that include social, communication, and behavioral challenges are generally present.

Despite significant research efforts, the exact causes remain poorly understood for many cases of ASD, and a combination of genetic and non-genetic factors seems likely. However, ASD occurs independently of race, ethnicity, or social background. Research in the field of ASD aims at answering several main questions: How can we diagnose ASD? What are the clinical features of ASD and their underlying pathomechanisms? What are the causative factors of ASD? How can we treat and prevent ASD?

This book presents the current state of the art answers to all these questions. With contributions from clinicians, and translational and basic researchers in the field of ASD, this book provides a brief but comprehensive overview of ASD, including causes, pathology, diagnosis, and treatment. It details some of the most discussed underlying pathogenic mechanisms for ASD, such as synaptopathies arising from genetic and non-genetic factors directly acting on brain cells and indirectly affecting synapse function and development, for example, through gut-brain signaling and mitochondrial dysfunction. The book reviews current ASD therapies, highlighting both behavioral and pharmaceutical interventions and possible new vistas. In addition, it also closely examines the impact of sensory problems in ASD and traumatic events, as well as discusses an evident overlap of ASD and frequently observed co-morbidities with other distinct mental disorders. I am convinced that this book will be valuable to parents and healthcare professionals caring for individuals with ASD, ASD researchers, and interested readers as it summarizes the current state of the art in ASD research, diagnosis, and treatment and informs about the still not entirely understood causes and molecular mechanisms behind ASD.

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