

AUTISM – OXIDATIVE STRESS, INFLAMMATION AND IMMUNE ABNORMALITIES

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– Reviewed by Dr. VLAD DIONISIE –
MD, PhD student

"Prof. Dr. Al. Obregia" Clinical Hospital of Psychiatry, Bucharest, Romania

"Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania

Abha Chauhan, PhD, is the head of the Developmental Neuroscience Laboratory at the New York State Institute for Basic Research in Developmental Disabilities in New York. She is a renowned scientist in the field of developmental disabilities contributing to the knowledge of oxidative stress and inflammation mechanisms in autism.

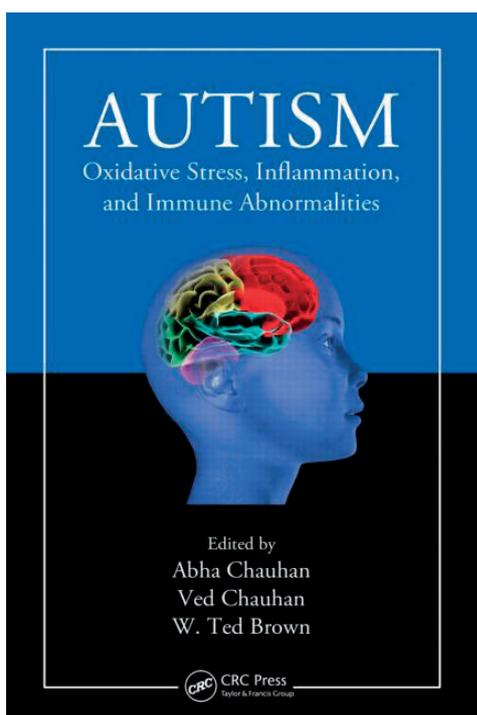
Ved Chaung, PhD, is the head of the Cellular Neurochemistry Laboratory at the New York State Institute for Basic Research. His main research concerning autism

focuses on cellular signalling and membrane abnormalities. He succeeded to contribute to the understanding of cellular aspects in autism, therefore adding more important pieces to the autism "puzzle".

W. Ted Brown, MD, PhD, is the director of the New York State Institute for Basic Research in Developmental Disabilities, adjunct professor at the State University of New York-Downstate Medical Center and fellow of the American College of Medical Genetics. His initial work was on genetic syndromes such as Down, fragile X syndrome or progeria. He is considered the first to discover the link between the Down syndrome and fragile X syndrome. His current work focuses on autism genetics.

Gathering the expertise of renowned researchers in genetics, clinical psychiatry and psychology, immunology, neurochemistry and neurobiology, pathology and behavioural sciences of autism, the *AUTISM Oxidative stress, Inflammation and Immune Abnormalities* provides an up to date scientific evidence of the pathophysiological causes of autism spectrum disorders from a wide point of view.

The book is addressed to scientific researchers, medical clinicians especially child and adolescent psychiatrists and to a broad range of mental health practitioners in search for a better understanding of



autism spectrum disorder from a combined molecular, morphological, genetic and clinical perspective.

From the begging, the book has no claim in presenting the final causative process of autism but in properly highlighting the existing research. Therefore, *AUTISM Oxidative stress, Inflammation and Immune Abnormalities* represents a solid scientific base for future research and a new start point in autism study.

The book thoroughly reviews the structural brain changes paralleled by metabolic changes contributing to the clinical phenotype (Chapter 1), primary sites of oxidative damage at a molecular level (neurofilament heavy chain) and possible oxidative stress markers for autistic brain (Chapter 2), the altered neurotrophin expression in autism with future therapeutic interventions (Chapter 3), the multiple genes and interactions genes-environment (Chapter 4), the evidence on maternal depression and a monoamine oxidase A gene polymorphism (Chapter 5), the role of impaired paraoxonase 1 in autism spectrum disorder (Chapter 6), the molecular mechanism whereby heavy metals promote oxidative stress (Chapter 7), the novel animal models of autism and the protective effects of antioxidants (Chapter 8), the hypothesis of unexplained regression in autism (Chapter 9), the association of

autism spectrum disorder and abnormalities in lipid metabolism, membrane proteins and signal transduction (Chapter 10), the calcium signalling in this disease (Chapter 11), the activation of neuroglia and the neuroimmune system (Chapter 12), the innate immunity in autistic children (Chapter 13), the Gastrointestinal-related immune dysfunction and autistic behaviours (Chapter 14), the theory of a dysregulation of the gut in autism (Chapter 15), the cytokine polymorphism in autism and the role in immune alteration (Chapter 16), the alleles that act in the mother to affect the embryo or fetus (Chapter 17), the behavioural and the somatic and systemic features of autism (Chapter 18) and finally the biopsychosocial model's utility to treat autism (Chapter 19).

This book brings to the front the importance of oxidative stress and inflammation processes from molecular to biochemical phases in the aetiology of autism spectrum disorder. Also, it puts the light to the open doors for therapeutic targets and early interventions. All these features guarantee the success of the book and its important usefulness in future research.

Hence, based on the vast experience during decades of research of its contributors, the *AUTISM Oxidative stress, Inflammation and Immune Abnormalities* comes as an useful tool for scientists at crossroads.