
Contents

Preface VII

- Section 1 Genetics and Pathophysiology 1**
- Chapter 1 **Genetic and Biochemical Factors Related to the Risk and Disability Progression in Multiple Sclerosis 3**
Daniel Čierny, Jozef Michalik, Ema Kantorová, Egon Kurča and Ján Lehotský
- Chapter 2 **The Gateway Reflex, a Novel Neuro-immune Interaction, is Critical for the Development of Mouse Multiple Sclerosis (MS) Models 31**
Daisuke Kamimura, Yasunobu Arima, Andrea Stofkova, Naoki Nishikawa, Kotaro Higuchi, Takuto Ohki and Masaaki Murakami
- Chapter 3 **Intrathecal Immunoglobulin Synthesis in MS—A Complete Reappraisal 51**
Mickael Bonnan
- Chapter 4 **Autoimmune Processes in Multiple Sclerosis: Production of Harmful Catalytic Antibodies Associated with Significant Changes in the Hematopoietic Stem Cell Differentiation and Proliferation 99**
Georgy A. Nevinsky
- Chapter 5 **Multiple Sclerosis and Its Relationship with Oxidative Stress, Glutathione Redox System, ATPase System, and Membrane Fluidity 149**
Genaro G. Ortiz, Fermín P. Pacheco-Moisés, Erandis D. Torres-Sánchez, Tanya E. Sorto-Gómez, Mario Mireles-Ramírez, Alfredo León-Gil, Héctor González-Usigli, Luis J. Flores-Alvarado, Erika D. González-Renovato, Angelica L. Sánchez-López, Margarita Cid-Hernández and Irma E. Velázquez-Brizuela

- Section 2 Environmental Risk Factors and Clinical Issues in MS 167**
- Chapter 6 **Pediatric Multiple Sclerosis 169**
Ozgul Ekmekci
- Chapter 7 **Association Between Multiple Sclerosis Risk and Human Immunodeficiency Virus Infection: Insights and Challenges 187**
Ehtishamul Haq, Insha Zahoor and Mushfiquddin Khan
- Chapter 8 **The Role of Over-Nutrition and Obesity in Multiple Sclerosis 195**
Ema Kantorová, Egon Kurča, Daniel Čierny, Dušan Dobrota and Štefan Sivák
- Chapter 9 **Cognitive Deficits and Neuropsychological Assessment in Multiple Sclerosis 211**
Alena Javůrková, Denisa Zimová, Katarína Tomašovičová and Jaroslava Raudenská
- Chapter 10 **Social Cognition Impairments in Patients with Multiple Sclerosis and Comparison with Imaging Studies, Disease Duration and Grade of Disability 227**
Valentina Ignatova, Lyudmila Todorova and Jivko Surchev
- Chapter 11 **Sex Hormones and Multiple Sclerosis 257**
Anastasiya G. Trenova
- Chapter 12 **Neuroprotection and Recovery in Multiple Sclerosis 281**
Dafin F. Muresanu, Maria Balea, Olivia Rosu, Anca Buzoianu and Dana Slavoaca
- Chapter 13 **Neuroprotection: A New Therapeutic Approach of Relapsing Remitting Multiple Sclerosis 307**
Juan Espinosa-Parrilla, Marco Pugliese, Nicole Mahy and Manuel J Rodríguez