

## **Contents**

<b>Preface</b>	<b>5</b>
<b>Foreword</b>	<b>6</b>
<b>List of Contributors</b>	<b>8</b>
<b>Chapter 1 Introduction to the Gut-Brain Axis</b> Dr. Perna Kukreti	<b>10</b>
<b>Chapter 2 Enteric Nervous System - The Second Brain</b> Dr. Rajat Singh, Ritu	<b>16</b>
<b>Chapter 3 The Microbiota-Gut-Brain Axis - The Science Behind the Link</b> Dr Rashid Gouri, Vanshika	<b>20</b>
<b>Chapter 4 Microbiome and Mental Health - Depression and Anxiety</b> Dr. Ashish Bansal	<b>24</b>
<b>Chapter 5 The Role of Diet in Shaping the Gut Microbiome</b> Dr Suman Verma, Ms. Poonam	<b>30</b>
<b>Chapter 6 Gut Microbiota in Neurological Disorders - Parkinson's and Alzheimer's Disease</b> Dr. Kriti Chauhan, Dr. Prasoon Lata	<b>37</b>
<b>Chapter 7 Probiotics, Prebiotics, and Psychobiotics - Therapeutic Modulation of the Gut-Brain Axis</b> Dr. Udit Singh, Dr. Pulak Tosh	<b>43</b>
<b>Chapter 8 The Gut-Immune-Brain Axis - Inflammation and Autoimmunity</b> Dr. Monika Moni MD, Dr. Kratika Verma	<b>48</b>

<b>Chapter 9 Microbiome-Based Interventions for Mental Health - Evidence and Clinical Trials</b>	
Dr. Ashish Bansal, Niharika Gaur	53
<b>Chapter 10 The Era of Personalized Microbiome Medicine</b>	
Dr Vijay Deepak Verma, Dr Prem Singh Nayyar	61
<b>Chapter 11 Maternal Gut Microbiome- Role in Maternal and Fetal Mental Health</b>	
Dr. Meenakshi Singh	66
<b>Chapter 12 “Substance Abuse and Gut Integrity: Exploring Mechanisms, Implications, and Interventions”</b>	
Dr. Udit Singh, Dr. Aruna R	69
<b>Chapter 13 “Ultra-Processed Foods and Environmental Pollutants: Emerging Determinants of Gut and Mental Health”</b>	
Dr. Pulkit Khanna, Dr. Meenal Madhukar Thakare	77
<b>Chapter 14 Sleep, Circadian Rhythms, and the Gut Microbiome – Interconnected Systems in Health and Disease</b>	
Dr. Indira Prasad	85
<b>Chapter 15 Microbiome and Gender Differences</b>	
Dr. Ruchita	96
<b>Chapter 16 Pediatric and Adolescent Gut-Brain Axis - Developmental Perspectives</b>	
Dr. Aarti, Professor, Dr. Kamal Singh	100