

Colin R. Martin  
Victor R. Preedy  
Vinood B. Patel  
*Editors*

Comprehensive  
Guide to  
Post-Traumatic  
Stress Disorder

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# Comprehensive Guide to Post-Traumatic Stress Disorders



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Colin R. Martin • Victor R. Preedy  
Vinood B. Patel  
Editors

# Comprehensive Guide to Post-Traumatic Stress Disorders

With 100 Figures and 299 Tables

 Springer Reference

*Editors*

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## Foreword

Post-traumatic stress disorder (PTSD) represents a relatively new frontier within the mental health field in terms of diagnosis and effective treatment. PTSD, despite its recent development as an important clinical classification within contemporary psychiatric and mental health practice, has a rich heritage in terms of the impact of this extremely distressing disorder evidenced by historic records of individuals suffering chronic psychological incapacity. It is important to recognize that the recognition of what would now be termed the key or cardinal signs and symptoms of PTSD were often manifest in circumstances of conflict and war. During World War I, soldiers traumatized by their horrific experiences in the trenches would develop symptoms that we would recognize today as PTSD; however, at that time, an incompassionate, ill-informed, and deleterious judgment was invariably made about such individuals emphasizing character deficit, lack of “moral fiber,” and even more unforgivably, cowardice. Fortunately, in more enlightened times, the characteristic pattern of symptoms which accompanies PTSD has been recognized, and the development of evidence-based, theoretically coherent, and effective clinical interventions has eased the considerable psychological and emotional burden those experiencing PTSD have endured. Moreover, as the research base has matured over recent years into this enigmatic and complex clinical presentation, acknowledgment has been made that the experience of PTSD is not limited to combat or war zones but can be potentially experienced by anyone in all walks of life, from the soldier in combat to the victim of street crime to those involved in motor vehicle accidents and indeed the potential reaction to a prolonged and painful labor while giving birth. The experience of PTSD has no boundaries based on class, gender, or personality; every individual is potentially vulnerable to this most unpleasant of mental health concerns, given the intersection of circumstances that distill the classic symptom clusters associated with this disorder.

Innovations in the support and treatment of individuals with PTSD continue apace, and the research-informed evidence base in this area grows at an almost exponential pace. However, we should always remember that even in the context of a complex clinical condition such as PTSD, the technical aspects of intervention should always be considered within the context of the significant emotional burden of the condition which will not only affect the individual themselves but also their family and significant others. PTSD is accompanied by a large functional, emotional,

and social costs to the individual, and although many sufferers will improve significantly with effective treatment and be able to manage their condition extremely well, the notion of a “cure” is an elusive ideal. This is partly because of the difficulties of conceptualizing complex psychological phenomena, influenced within a social context and precipitated by a unique constellation of circumstances, into the classical medical diagnostic paradigm of etiology, diagnosis, and prognosis. PTSD is difficult to weave into the fabric of such a “disease” model, as of course are many areas of concern within mental health such as depression and anxiety. Given, of course, that depression and anxiety will, to a degree, accompany PTSD, making sense of the presentation creates many diagnostic challenges. These challenges, however, do need to be urgently met, to improve treatment interventions and outcomes for those with the diagnosis of PTSD, to improve the quality of life of sufferers, and to reduce the risk of self-harm and suicide that, in the most severe manifestation of the condition, can occur. Evidence-informed practice is therefore vital to address these critical issues.

Pulling all the desirable and up-to-date information and contemporary research evidence together on PTSD in a “one-stop” book that is accessible for specialist and nonspecialist clinicians and clinical researchers is not an easy task and certainly not one that can be met by brevity of approach. However, Colin Martin, Vinood Patel, and Victor Preedy have indeed risen to the challenges thrown down by the PTSD gauntlet and produced a comprehensive and inclusive book which covers all the key areas in depth and with a focus on inclusivity and multidisciplinary. Leading experts in the area of PTSD have contributed chapters to this book, which emphasize the very latest evidence and practice, which, it is hoped, will contribute to improved care and outcomes for those with PTSD and, moreover, cultivate increasing clinical and research interest. Professors Martin and Preedy and Dr. Patel have elegantly managed to thread a theme of compassion and care through their book to ensure that clinicians and researchers alike are mindful and respectful of the manifest human cost of this debilitating mental health presentation.

Matina Jewell

**Biography: Major Matina Jewell (retired)** grew up in the hinterland of Byron Bay, Australia, and joined the Army at age 17. During her 15-year military career, Matina earned eight war medals, completed the physically demanding Navy divers course, served on operations with the elite American Navy Seals, boarded smuggler ships in the Arabian Gulf, and, eventually, was posted as a peacekeeper with the United Nations in Syria and Lebanon, where she found herself thrown into the middle of a devastating war.

Retired from active duty as a result of the injuries she sustained during the 2006 Lebanon war, Matina knows the effects of PTSD firsthand.

Matina is a member of the ANZAC Centenary Commission alongside former Australian Prime Ministers Bob Hawke and the late Malcolm Fraser. Matina has served on the Australian Prime Ministerial Advisory Council and on the National

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Mental Health forum, helping pioneer positive change, particularly for younger veterans and their contemporary war wounds, including PTSD.

Matina has a Bachelor of Science Degree and a Masters in Project Management; she is multilingual, speaking English, Arabic, and Bahasa Indonesian. Matina is a best-selling author of her memoir *Caught in the Crossfire* (Allen and Unwin 2009) and is an in-demand keynote speaker internationally. Despite a busy schedule as a mum, Matina also volunteers to several charities, is the Ambassador of the Australian Peacekeeping Memorial Project, and lives on the far North Coast of New South Wales, Australia.





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## Preface

Post-traumatic stress disorder (PTSD) covers a myriad of functional impairments that affects neurological processes, behavior, and psychology in their broadest sense. This condition has long been recognized as having a wide range of causative factors or precipitating events, such as wars, environmental disasters, rape, accidents, physical traumas, and near-death events. However, there is now increasing evidence to show many other factors or conditions can cause PTSD such as bullying, childbirth, torture, heart failure, and cancer survival, to name but a few. It has been calculated that PTSD affects 1 in 10 women and 1 in 20 men in their lifetime. In military veterans, it may be as high as 1 in 3.

At the microcosm level, PTSD affects, or is associated with, disturbances in the cellular and biochemical milieu of the brain. There are also physiological lesions as determined by imaging techniques. A genetic basis for PTSD has also been proposed with regard to nucleotide polymorphisms. More recently, animal models have also been described which enable both causative factors and pharmacological treatments to be investigated in depth.

Overall, PTSD impacts not only the individual but also spouses, siblings, and the family unit. Local communities are also affected when precipitating events occur on a greater geographic scale (wars, environmental disasters). It is thus essential that PTSD is diagnosed with the utmost efficiency and efficacy.

Understanding disease has the ultimate aim of advancing treatment regimens, and PTSD is no exception to this scientific ethos. Treatments for PTSD are varied, ranging from frank counseling to behavioral or cognitive therapy. Drugs may also be used on some occasions. The diagnosis and treatment regimens of PTSD are as varied as the causative factors. Nevertheless, it is a truism that the lessons and knowledge about one form of PTSD may be cross-transferable to other forms or causes of PTSD. However, gaining such knowledge on all aspects of PTSD has been difficult as hitherto there have been no comprehensive texts on PTSD. The *Comprehensive Guide to Post-Traumatic Stress Disorder* addresses this. It is the most complete single resource on PTSD.

The book is divided into 16 sections as follows:

1. Setting the Scene: General Aspects, Definitions, and Selective Chapters to Illustrate the Breadth of PTSD

2. PTSD in Different Conditions, Groups, and Specific Incidents
3. PTSD in Relation to Behavioral or Psychological Scenarios
4. Peritraumatic Stress
5. Biochemical, Molecular, and Genetic Aspects of PTSD
6. Neurological and Neurogenic Aspects of PTSD
7. Physiological Aspects
8. Traumatic Responses in Life Stages: From Children to the Elderly
9. PTSD and Gender
10. Animal Models of PTSD
11. Population and International Aspects of PTSD
12. Post-Traumatic Growth
13. Treatments, Strategies, and Therapies
14. Selective Screening Methods and Tools
15. Case Studies
16. Resources

The editors realize that some chapters may be suitable for more than one section. The book, however, has unique features. Each chapter has these subsections:

1. Abstract
2. Practice and Procedures: this relates to advice, protocols, or treatments
3. Key Facts: these are focused areas of knowledge
4. Summary Points: these encapsulate the chapter in bullet points

Contributors to the *Comprehensive Guide to Post-Traumatic Stress Disorder* are authors of international and national standing, leaders in the field. Emerging fields of science and important discoveries relating to PTSD are incorporated in this book. This represents a one-stop shopping of material related to PTSD and is indispensable reading for physicians, behavioral scientists, councillors, social workers, psychologists, health scientists, medical departments and colleges, therapists and practitioners of various disciplines, and policymakers.

Colin R. Martin  
Victor R. Preedy  
Vinood B. Patel

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## Biography



**Colin R. Martin, RN, B.Sc., M.Sc., Ph.D., M.B.A., YCAP, FHEA, C.Psychol., AFBPsS, C.Sci.** is Professor of Mental Health at Buckinghamshire New University, Middlesex, UK. He is also the Director of the Institute of Mental Health, a major mental health research hub established between Buckinghamshire New University and West London Mental Health NHS Trust. He is a Registered Nurse, Chartered Health Psychologist, and a Chartered Scientist. He also trained in analytical biochemistry, this aspect reflecting the psychobiological focus of much of his research within mental health. He has published or has in press over 200 research papers and book chapters. He is a keen book author and editor, and his outputs include the seminal five-volume magnum opus, *Handbook of Behavior, Food and Nutrition* (2011), the prophetic insight into the treatment of neurological disease, *Nanomedicine and the Nervous System* (2012), and the major reference works *Comprehensive Guide to Autism* (2014) and *Diet and Nutrition in Dementia and Cognitive Decline* (2015). Additionally, he has major research programs focusing on stress-vulnerability models of psychosis and schizophrenia, perinatal mental health, puerperal psychosis, occupational well-being assessment, forensic psychiatry, addiction, myalgic encephalomyelitis, and the relationship between physical and mental health. He is involved in collaborative International research with many European and non-European countries.



**Dr. Vinood B. Patel, B.Sc., Ph.D., FRSC** is currently a Reader in Clinical Biochemistry at the University of Westminster and honorary fellow at King's College London. He presently directs studies on metabolic pathways involved in liver disease, particularly related to mitochondrial energy regulation and cell death. Research is being undertaken to study the role of nutrients, antioxidants, phytochemicals, iron, alcohol, and fatty acids in the pathophysiology of liver disease. Other areas of interest are identifying new biomarkers that can be used for diagnosis and prognosis of liver disease, understanding mitochondrial oxidative stress in Alzheimer's disease, and gastrointestinal dysfunction in autism. Dr. Patel graduated from the University of Portsmouth with a degree in Pharmacology and completed his Ph.D. in Protein Metabolism from King's College London in 1997. His postdoctoral work was carried out at Wake Forest University Baptist Medical School studying structural-functional alterations to mitochondrial ribosomes, where he developed novel techniques to characterize their biophysical properties. Dr. Patel is a nationally and internationally recognized liver researcher and was involved in several NIH-funded biomedical grants related to alcoholic liver disease. Dr. Patel has edited biomedical books in the area of nutrition and health prevention, autism, and biomarkers and has published over 150 articles, and in 2014 he was elected as a Fellow to The Royal Society of Chemistry.

**Victor R. Preedy B.Sc., Ph.D., D.Sc., FRSB, FRSH, FRIPH, FRSPH, FRCPath, FRSC** is a senior member of King's College London. He is also Director of the Genomics Centre and a member of the Faculty of Life Sciences and Medicine. Professor Preedy graduated in 1974 with an Honors Degree in Biology and Physiology with Pharmacology. He gained his University of London Ph.D. in 1981. In 1992, he received his Membership of the Royal College of Pathologists, and in 1993, he gained his second doctoral degree, for his outstanding contribution to protein metabolism in health and disease. Professor Preedy was elected as a Fellow to the Institute of Biology in 1995 and to the Royal College of Pathologists in 2000. Since then, he has been elected as a Fellow to the Royal Society for the Promotion of Health (2004) and The Royal Institute of Public Health (2004). In 2009, Professor

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Preedy became a Fellow of the Royal Society for Public Health and in 2012 a Fellow of the Royal Society of Chemistry. In his career, Professor Preedy has carried out research at the National Heart Hospital (part of Imperial College London) and the MRC Centre at Northwick Park Hospital. He has collaborated with research groups in Finland, Japan, Australia, USA, and Germany. He is a leading expert on the science of health. Professor Preedy has published or edited over 600 articles, which include peer-reviewed manuscripts, research, reviews, books, and volumes.



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# Contents

## Volume 1

<b>Part I Setting the Scene: General Aspects, Definitions, and Selective Chapters to Illustrate the Breadth of PTSD</b> .....	<b>1</b>
<b>1 PTSD in History: From Uruk to Baghdad</b> .....	<b>3</b>
Philippe J. Birmes and Eric Bui	
<b>2 Evidence for PTSD as a Systemic Disorder</b> .....	<b>21</b>
Avram Bukhbinder and Paul E. Schulz	
<b>3 Dissociation, Dissociative Disorders, and PTSD</b> .....	<b>41</b>
Amie C. Myrick and Bethany L. Brand	
<b>4 Predisposing Risk Factors for PTSD: Brain Biomarkers</b> .....	<b>61</b>
Talma Hendler and Roe Admon	
<b>5 Forensic Aspects of Post-Traumatic Stress Disorder</b> .....	<b>77</b>
Aleksandar A. Jovanović, Bojana D. Dunjić, and Srdjan D. Milovanović	
<b>6 Comparing Cognitive Aspects of Post-Traumatic Stress Disorder and Trauma</b> .....	<b>97</b>
Mariana Kneese Flaks, Pedro Fonseca Zuccolo, and Francisco Lotufo-Neto	
<b>7 PTSD in the Military</b> .....	<b>115</b>
Andrea Phelps, Darryl Wade, and David Forbes	
<b>8 Autobiographical Memories and PTSD</b> .....	<b>131</b>
Elizabeth S. Lapidow and Adam D. Brown	
<b>9 Impact of Spiritual and Religious Coping on PTSD</b> .....	<b>147</b>
Courtney L. Slater, Jessica Bordenave, and Bret A. Boyer	
<b>10 Evaluation of Screening Tests for PTSD</b> .....	<b>163</b>
Scott D. McDonald, Emily L. Gentes, and Patrick S. Calhoun	



<b>11</b>	<b>Stress, Kindling and PTSD: Typical Symptoms of Temporal Lobe Epilepsy and Antiepileptic Medication</b> .....	181
	Petr Bob	
<b>12</b>	<b>Generalized Anxiety Disorder: How It Compares to PTSD</b> .....	193
	Amy Przeworski and Kimberly Dunbeck	
<b>13</b>	<b>Trauma Exposure, Schizophrenia Symptoms, and the Stress Vulnerability Model</b> .....	205
	Mick P. Fleming and Colin R. Martin	
<b>14</b>	<b>PTSD and Tort Law</b> .....	231
	Terri R. Day and Ryan C.W. Hall	
<b>15</b>	<b>Endocrine Aspects of PTSD: Hypothalamic-Pituitary-Adrenal (HPA) Axis and Beyond</b> .....	245
	Nikolaos P. Daskalakis, Marlon A. McGill, Amy Lehrner, and Rachel Yehuda	
<b>Part II PTSD in Different Conditions, Groups, and Specific Incidents</b> .....		<b>261</b>
<b>16</b>	<b>Post-Traumatic Stress Disorder in Survivors of Critical Illness</b> .....	263
	Jennifer H. Ryu, Maia S. Kredentser, O. Joseph Bienvenu, Marcus Blouw, Jitender Sareen, and Kendiss Olafson	
<b>17</b>	<b>Assessment and Treatment of PTSD in People with Intellectual Disabilities</b> .....	281
	Liesbeth Mevissen, Robert Didden, and Ad de Jongh	
<b>18</b>	<b>Traumatization and PTSD in Rescue Workers: Prevention, Assessment, and Interventions</b> .....	301
	Ilaria Setti and Piergiorgio Argentero	
<b>19</b>	<b>PTSD After Anesthesia: Prevalence, Diagnosis, and Proposed Treatments</b> .....	319
	Paola Aceto and Carlo Lai	
<b>20</b>	<b>PTSD, Trauma-Related Symptoms, and Pain: A General Overview</b> .....	333
	Lydia Gómez-Pérez, Alicia E. López-Martínez, Gema T. Ruiz-Párraga, and Michelle J.N. Teale Sapach	
<b>21</b>	<b>Post-Traumatic Stress Disorder Related to Surgery: Prevalence and Risk Factors</b> .....	351
	Kate G. Deatrich and Bret A. Boyer	

<b>22 Post-Traumatic Stress Symptoms in Breast Cancer: Prevalence, Predictors, Consequences, and Treatment</b> . . . . .	367
Maja O'Connor and Robert Zachariae	
<b>23 Post-Traumatic Stress Disorder in Prostate Cancer</b> . . . . .	383
Ioannis Anastasiou and Konstantina Yiannopoulou	
<b>24 Childbirth as Retraumatization of Childhood's Sexual Abuse</b> . . . . .	391
Shir Daphna-Tekoah, Rachel Lev-Wiesel, and Itzhak Z. Ben-Zion	
<b>25 Through the Looking Glass: Complexities of Trauma for Mothers and Their Babies Born Very Preterm</b> . . . . .	409
Catherine Campbell, Felice Watt, and Mary Sharp	
<b>26 PTSD and Lateral Preference: Overview of the Relationship Between Distress Symptoms and Handedness</b> . . . . .	435
Gilad Ritov and Zion Barnettz	
<b>27 Prevalence and Risk Factors for Post-Traumatic Stress Disorder Symptoms Among National Guard/Reserve Component Service Members Deployed to Iraq and Afghanistan</b> . . . . .	455
Melissa A. Polusny, Meredith A. Martyr, Christopher R. Erbes, Paul A. Arbisi, Mark Kramer, Elizabeth Gibson, and Heather Oleson	
<b>28 PTSD and Mild Traumatic Brain Injury in Iraq and Afghanistan War</b> . . . . .	489
John C. Moring, Abby E. Blankenship, Jacob M. Williams, Alma Molino, and Alan L. Peterson	
<b>29 Torture and PTSD: Prevalence, Sequelae, Protective Factors, and Therapy</b> . . . . .	505
Carla C. Schubert and Raija-Leena Punamäki	
<b>30 Post-Traumatic Stress Symptom Trajectories After Disasters: Adult and Child Reactions</b> . . . . .	537
Betty S. Lai, Brooke A. Beaulieu, Constance E. Ogokeh, Ashwini Tiwari, and Shannon Self-Brown	
<b>31 PTSD and Ocular Insult: PTSD After Rhegmatogenous Retinal Detachment</b> . . . . .	549
Anat Abudy and Ido Didi Fabian	
<b>32 PTSD and Fibromyalgia Syndrome: Focus on Prevalence, Mechanisms, and Impact</b> . . . . .	563
Winfried Häuser, Jacob Ablin, and Brian Walitt	
<b>33 Post-Traumatic Stress in Parents of Children with Leukemia: Methodological and Clinical Considerations</b> . . . . .	579
Marta Tremolada, Sabrina Bonichini, Giuseppe Basso, and Marta Pillon	

<b>34 Post-Traumatic Stress Disorder (PTSD) and Its Relationship with Perinatal Bereavement: Definitions, Reactions, Adjustments, and Grief</b> .....	599
Caroline J. Hollins Martin and Colin R. Martin	
<b>35 Alcohol Use Disorders and Comorbid Post-Traumatic Stress Disorder in US Military Veterans: Etiology and Current Treatment Approaches</b> .....	627
Lorig K. Kachadourian, Elissa McCarthy, and Ismene L. Petrakis	
<b>36 Comorbid Post-Traumatic Stress Disorder, Pain, and Opiate Addiction</b> .....	643
Bethany Ketchen, Pamela Eilender, and Ayman Fareed	
<b>Part III PTSD in Relation to Behavioral or Psychological Scenarios</b> .....	<b>669</b>
<b>37 PTSD and Self-Directed Violence</b> .....	671
Craig J. Bryan	
<b>38 Importance of Comorbid Disorders to Suicide Risk in PTSD</b> ....	683
Kim S. Betts, Gail M. Williams, and Rosa Alati	
<b>39 PTSD and Suicide Risk in War Veterans</b> .....	703
Maurizio Pompili, Giovanni Dominici, Alberto Forte, Gloria Giordano, and Dorian A. Lamis	
<b>40 Mental Health Outcomes 27 Years After a Major Disaster</b> .....	719
Are Holen	
<b>41 PTSD, Anger, and Aggression: Epidemiology, Etiology and Clinical Practice</b> .....	739
Jan Rodenburg, Lieke Heesink, and Boris Droždek	
<b>42 Nightmares and PTSD: Characterization, Theories, and Treatment Approaches</b> .....	759
Wilfred R. Pigeon and Michelle Carr	
<b>43 Distress Tolerance as Risk and Maintenance Factor for PTSD: Empirical and Clinical Implications</b> .....	775
Anka A. Vujanovic, Brett T. Litz, and Samantha G. Farris	
<b>44 PTSD and Bipolar Disorder: Approaches to Pharmacology, Psychotherapy, and Psychoeducation</b> .....	791
Laura Bajor, Jeffrey Lucero, Jenny Melguizo, Edwin Raffi, and Dana Wang	

<b>45 Post-Traumatic Stress Disorder and Impulsive and Risky Behavior: Overview and Discussion of Potential Mechanisms</b> .....	803
Matthew T. Tull, Nicole H. Weiss, and Michael J. McDermott	
<b>46 Trauma as a Risk Factor for and Pathway to Crime and Therapeutic Aspects for Incarcerated Women: A Swiss Perspective</b> .....	817
Sandy Krammer and Dorothee Klecha	
<b>47 Associations Between Dissociation and Post-Traumatic Stress Response</b> .....	831
Murat Boysan	
<b>48 Exploration of the Multidimensional Emotional Experiences of Individuals with PTSD</b> .....	851
Anne N. Banducci, Michael J. McDermott, Kevin M. Connolly, and Kathryn S. Hahn	
<b>49 Documentation of Torture and Mental (Psychiatric) Findings</b> ....	869
Ismail Ozgur Can, Halis Ulas, and Umit Unuvar	
<b>50 Does the Current Concept of Stress Explain PTSD?</b> .....	887
J.M. Koolhaas and S.F. de Boer	

## Volume 2

<b>Part IV Peritraumatic Stress</b> .....	<b>905</b>
<b>51 Peritraumatic Experience and Traumatic Stress</b> .....	907
Kaitlyn R. Gorman, Eden Engel-Rebitzer, Annie M. Ledoux, Michelle J. Bovin, and Brian P. Marx	
<b>52 Peritraumatic and Post-Traumatic Stress Among Individuals with Diabetes Mellitus</b> .....	925
Bret A. Boyer and Kate G. Deatrich	
<b>Part V Biochemical, Molecular, and Genetic Aspects of PTSD</b> ....	<b>941</b>
<b>53 Endogenous Glucocorticoids in Traumatic Memory Extinction: Implications for PTSD</b> .....	943
Catherine Lau, Jesse D. Whiteman, and Jacqueline J. Blundell	
<b>54 Level of Expression and Functional Properties of Lymphocyte Corticosteroid Receptors as Biological Correlates of PTSD, Trauma-Exposure, or Resilience to PTSD</b> .....	961
Gordana Matić, Danijela Vojnović Milutinović, Ivana Elaković, Jelena Nestorov, and Danka Savić	

<b>55</b>	<b>Inflammatory Markers in PTSD</b> . . . . .	979
	Corline J. Brouwers, Jutta M. Wolf, and Roland von Känel	
<b>56</b>	<b>Corticotropin-Releasing Hormone Receptor 1 (CRHR1) Polymorphisms and Post-Traumatic Stress Disorder</b> . . . . .	995
	Mackenzie J. Lind, Chelsea Sawyers, Christina Sheerin, and Ananda B. Amstadter	
<b>57</b>	<b>Catechol-<i>O</i>-Methyltransferase (COMT) val<sup>158</sup>met Polymorphism as a Risk Factor for PTSD</b> . . . . .	1019
	Nina Leão Marques Valente, Jose Paulo Fiks, and Marcelo Feijó de Mello	
<b>58</b>	<b>Noradrenaline and Post-Traumatic Stress Disorder</b> . . . . .	1033
	M. Zafer Gören and Hülya Cabadak	
<b>59</b>	<b>Gene Environment Interplays: Why PTSD Makes a Good Case for Gene–Environment Interaction Studies and How Adding a Developmental Approach Can Help</b> . . . . .	1053
	Barbara Forresi, Ernesto Caffo, and Marco Battaglia	
<b>60</b>	<b>Post-Traumatic Stress Disorder and DNA Methylation</b> . . . . .	1069
	Jennifer A. Rusiecki, Monica Uddin, Melannie S. Alexander, and Lee E. Moore	
<b>61</b>	<b>Stress and Resilience in Combat-Related PTSD: Integration of Psychological Theory and Biological Mechanisms</b> . . . . .	1097
	Dagmar Bruenig, Charles P. Morris, Ross McD Young, and Joanne Voisey	
<b>Part VI</b>	<b>Neurological and Neurogenic Aspects of PTSD</b> . . . . .	<b>1121</b>
<b>62</b>	<b>Neuroimaging in PTSD and Relationship with Other Stress Disorders: Comparisons with Anxiety Disorders and Depression</b> . . . . .	1123
	Toshiki Shioiri	
<b>63</b>	<b>Hippocampal Volumes in PTSD</b> . . . . .	1147
	Linda L. Chao	
<b>64</b>	<b>White Matter Alterations Following Childhood Trauma</b> . . . . .	1159
	Judith K. Daniels	
<b>65</b>	<b>Post-Traumatic Stress Disorder and Its Interrelationship Between Crush Injury and Pain</b> . . . . .	1175
	Edward Shipton	
<b>66</b>	<b>Neuroanatomical Correlates of PTSD: Risk, Resiliency, and Sequelae</b> . . . . .	1193
	Ashley N. Stillman and Robin L. Aupperle	

---

<b>67</b>	<b>Auditory M50 Sensory Gating Deficit and Superior Temporal Gyrus Pathology in Post-Traumatic Stress Disorder</b> . . . . .	1209
	Gerardo Villarreal and Michael A. Hunter	
<b>68</b>	<b>Auditory Hallucinations in Chronic Trauma Disorders: Phenomenology and Psychological Mechanisms</b> . . . . .	1223
	Martin J. Dorahy and Rachael C.W. Palmer	
<b>69</b>	<b>Eye Tracking and PTSD</b> . . . . .	1241
	Kim Felmingham	
<b>Part VII</b>	<b>Physiological Aspects</b> . . . . .	<b>1257</b>
<b>70</b>	<b>PTSD in Structural Heart Disease</b> . . . . .	1259
	Tali Bayer-Topilsky and Maurice Enriquez-Sarano	
<b>71</b>	<b>Diminished Vagal and/or Increased Sympathetic Activity in Post-Traumatic Stress Disorder</b> . . . . .	1277
	Agorastos Agorastos, Michael Kellner, Dewleen G. Baker, and Oliver Stiedl	
<b>72</b>	<b>Metabolic Syndrome Among People with PTSD: Epidemiological Overview</b> . . . . .	1297
	Francesco Bartoli, Annamaria Lax, Giuseppe Carrà, and Massimo Clerici	
<b>73</b>	<b>Dysmenorrhea and PTSD</b> . . . . .	1315
	Takashi Takeda	
<b>Part VIII</b>	<b>Traumatic Responses in Life Stages: From Children to the Elderly</b> . . . . .	<b>1329</b>
<b>74</b>	<b>Prolonged Exposure Treatment for Children</b> . . . . .	1331
	Lilach Rachamim, Liat Helpman, Eva Gilboa-Schechtman, and Elna Yadin	
<b>75</b>	<b>Crisis Psychotherapy in Children with Post-Traumatic Stress Disorder: Method of Cognitive–Metaphorical Reconstruction of Traumatic Experiences in Drawings</b> . . . . .	1349
	Igor Dobryakov and Irina Nikolskaya	
<b>76</b>	<b>Bullying and PTSD Symptoms in Children and Adolescents</b> . . . . .	1367
	Thormod Idsoe, Atle Dyregrov, Ella Cosmovici Idsoe, and Morten Birkeland Nielsen	

<b>77</b>	<b>Prevalence of PTSD in School-Age Population Post Earthquake/Tsunami</b> .....	1383
	Ana M. Briceño, Alfonso Correa, Sandra Oltra, Michèle Barreau, Anamaria Dávila, Carolina Ebel, Juan M. Castillo, Sonia Castro, and Marcela Abufhele	
<b>78</b>	<b>Post-Traumatic Stress Disorder in Adolescents After a Natural Disaster</b> .....	1401
	Cheng-Fang Yen and Chia-Chuang Hsu	
<b>79</b>	<b>Post-Traumatic Growth in Adolescent Survivors of Cancer</b> .....	1421
	Rosanne Menna and Andrea Turner-Sack	
<b>80</b>	<b>Post-Traumatic Stress Disorder in Maltreated Youth</b> .....	1433
	Christopher A. Kearney, Emma H. Ross, and Timothy L. Day	
<b>81</b>	<b>Elderly and Pharmacological Treatment of PTSD</b> .....	1445
	Ryan C.W. Hall and Sherif Soliman	
<b>Part IX</b>	<b>PTSD and Gender</b> .....	<b>1463</b>
<b>82</b>	<b>Sex Differences in PTSD: Mediation and Moderation Effects</b> .....	1465
	Dorte M. Christiansen	
<b>83</b>	<b>PTSD and Gender Differences in Earthquake Survivors</b> .....	1483
	Claudia Carmassi and Liliana Dell'Osso	
<b>84</b>	<b>PTSD Behind Bars: Incarcerated Women and PTSD</b> .....	1497
	Susan Hatters Friedman, Stephanie Collier, and Ryan C.W. Hall	
<b>Part X</b>	<b>Animal Models of PTSD</b> .....	<b>1513</b>
<b>85</b>	<b>Challenge of Developing a Validated Animal Model of PTSD: Focus on Juvenile Stress Model</b> .....	1515
	Richter-Levin Gal, Kehat Orli, Limor Shtoots, and Anunu Ruchi	
<b>86</b>	<b>Psychosocial Stress in Rats: Animal Model of PTSD Based on Clinically Relevant Risk Factors</b> .....	1531
	Phillip R. Zoladz and David M. Diamond	
<b>87</b>	<b>Electric Shock as Model of Post-Traumatic Stress Disorder in Rodents</b> .....	1553
	Mano Aliczki and Jozsef Haller	
<b>88</b>	<b>Heightened Muscle Tension in Rodent Model of PTSD</b> .....	1573
	Stephen C. Heinrichs	

**89 Inflammation and Oxidative Stress in the Brain and Blood in an Animal Model of Post-Traumatic Stress Disorder: Mechanisms for PTSD Progression** ..... 1587  
 C. Brad Wilson, Leslie D. McLaughlin, Anand Nair, Philip J. Ebenezer, Rahul Dange, and Joseph Francis

**Volume 3**

**Part XI Population and International Aspects of PTSD** ..... **1603**

**90 Culturally Shaped Manifestations of PTSD in Kyrgyzstan** ..... 1605  
 Elena Molchanova, Nazim Agazade, and Igor Dobryakov

**91 Post-Traumatic Stress Disorder (PTSD): Indian Perspective** ..... 1617  
 Lalitha Pillai, Sureshkumar G. Mehta, and Bhushan L. Chaudhari

**92 “Orongo” and “Cen” Spirit Possessions: Post-Traumatic Stress Disorder in a Cultural Context – Local Problem, Universal Disorder with Local Solutions in Northern Uganda** ..... 1637  
 Emilio Ovuga and Catherine Abbo

**93 PTSD in Asian American and Pacific Islander Veterans: Prevalence, Context, and Implications for Practice** ..... 1649  
 Athena Yoneda, Julia M. Whealin, and Jack Tsai

**94 War, Religiosity, Ideology, and PTSD in the Middle East** ..... 1669  
 Vivian Khamis

**95 Classic and Complex PTSD in Switzerland: Prevalence and Theoretical Discussion** ..... 1679  
 Sandy Krammer, Yves Linder, and Andreas Maercker

**96 Relationship Between PTSD and Brazilian Urban Violence** ..... 1695  
 Denise Martin and Juliana Da Silva-Mannel

**97 Post-Traumatic Stress Disorder in China** ..... 1713  
 Xiaomei Pei, Yuekang Li, and Peng Kun

**Part XII Post-Traumatic Growth** ..... **1729**

**98 Post-Traumatic Growth, Psychological Well-Being, and Distress** ..... 1731  
 Chiara Ruini, Elisa Albieri, and Francesca Vescovelli

**99 War and Post-Traumatic Growth** ..... 1755  
 Noreen M. Graf



---

<b>100</b>	<b>Vicarious or Secondary Post-Traumatic Growth: How Are Positive Changes Transmitted to Significant Others After Experiencing a Traumatic Event?</b> .....	1767
	Cristian Ochoa Arnedo and Anna Casellas-Grau	
<b>101</b>	<b>Post-Traumatic Growth in Oral Cavity Cancer in Relation to Positive Coping Strategies, Hope, and Optimism</b> .....	1783
	Roger A. Zwahlen, Rama Krsna Rajandram, and Josef Jenewein	
<b>102</b>	<b>Post-Traumatic Growth: Critical Review of Problems with the Current Measurement of the Term</b> .....	1797
	Dorte M. Christiansen, Thomas N. Iversen, Sara L. Ambrosi, and Ask Elklit	
<b>103</b>	<b>Post-Traumatic Growth in Traumatic Injured Patients in Mainland China</b> .....	1813
	Yanbo Wang and Xudong Zhao	
<b>104</b>	<b>Post-Traumatic Growth: Focus on Concepts and Cross-Cultural Measurement Issues</b> .....	1831
	Samuel M.Y. Ho	
<b>Part XIII</b>	<b>Treatments, Strategies, and Therapies</b> .....	<b>1849</b>
<b>105</b>	<b>Cognitive-Behavioral Therapy for Insomnia and Nightmares in PTSD</b> .....	1851
	Geneviève Belleville and Mylène Dubé-Frenette	
<b>106</b>	<b>Evidence-Based Cognitive Behavioral Treatments for PTSD in Adults</b> .....	1871
	Juliette M. Mott and Ellen J. Teng	
<b>107</b>	<b>Effectiveness of Cognitive Processing Therapy for PTSD Across Various Populations, Traumatic Events, and Co-occurring Conditions</b> .....	1887
	Ellen T. Healy, Kristen H. Walter, and Kathleen M. Chard	
<b>108</b>	<b>Effectiveness of Integrated Treatments for PTSD and Comorbid Panic Disorder</b> .....	1905
	Ellen J. Teng, Nathaniel Van Kirk, and M. Leili Plasencia	
<b>109</b>	<b>Concept of Unpaired Extinction for Treating PTSD</b> .....	1919
	Bernard G. Schreurs and Lauren B. Burhans	
<b>110</b>	<b>Visual Arts and Poetry Usage for PTSD: Considerations for Treatment</b> .....	1935
	Grace Brillantes-Evangelista	

---

<b>111</b>	<b>Intensive Cognitive-Behavioral Treatment of PTSD: An Overview of Massed Outpatient Treatment Programs</b> . . . . .	1957
	Lotte Hendriks, Rianne de Kleine, Gert-Jan Hendriks, and Agnes van Minnen	
<b>112</b>	<b>Incorporating Complementary and Alternative Practices into Treatment of PTSD</b> . . . . .	1979
	Janina Scarlet and Ariel J. Lang	
<b>113</b>	<b>Mantram Repetition Program for Combat-Related PTSD Symptom Management in American Veterans</b> . . . . .	1997
	Jill E. Bormann and Luc R. Pelletier	
<b>114</b>	<b>Information Technology Enhancements Targeting Screening, Intervention, and Linkage for Acute Care Medical Patients with PTSD and Related Comorbidity: An Evolving Model</b> . . . . .	2015
	Douglas Zatzick, Joan Russo, Cory Michael Kelly, Roselyn Peterson, Jeff Love, Leah Ingraham, Victoria Neam, Roxanne Guiney, Kirsten Sandgren, Ju-Pei Yao, Margot Kelly-Hedrick, and Erik Van Eaton	
<b>115</b>	<b>Group Therapy for Complex PTSD: Experiences with Survivors of War, Torture, and Childhood Sexual Abuse</b> . . . . .	2033
	Boris Droždek	
<b>116</b>	<b>Multifamily Therapy in the Frontline: Intervention for Families Confronted with War and Organized Violence</b> . . . . .	2049
	Elisa van Ee, Erie Hilliger, and Aart van Norden	
<b>117</b>	<b>Valproic Acid in the Treatment of Post-Traumatic Stress Disorder</b> . . . . .	2069
	Takuya Yoshiike and Kenichi Kuriyama	
<b>118</b>	<b>Writing Therapies for Post-Traumatic Stress and Post-Traumatic Stress Disorder: Review of Procedures and Outcomes</b> . . . . .	2083
	A.A.P. van Emmerik and Jan H. Kamphuis	
<b>119</b>	<b>Accelerated Resolution Therapy: A Brief, Emerging Evidence-Based Treatment for PTSD</b> . . . . .	2095
	Kevin E. Kip, Laney Rosenzweig, Diego F. Hernandez, Amy Shuman, Ann Witt, Erin Keller, and David M. Diamond	
<b>120</b>	<b>Treatment of Trauma-Related Suicidal Self-Directed Violence: Expanding Knowledge Base with a Focused Case Study</b> . . . . .	2115
	Jennifer Tucker, Kacie Armstrong, Laura L. Neely, and Marjan Ghahramanlou-Holloway	

**121 Positive Psychotherapy in Cancer: Facilitating Post-Traumatic Growth in Assimilation and Accommodation of Traumatic Experience** ..... 2133  
 Cristian Ochoa Arnedo and Anna Casellas-Grau

**Part XIV Selective Screening Methods and Tools** ..... **2151**

**122 Screening for Harmful Alcohol Use in Trauma Settings** ..... 2153  
 Allyson Browne, Steve Allsop, and Stephan Schug

**123 Assessment of Post-Traumatic Stress, Depression, and Anxiety in School-Aged Children** ..... 2171  
 Rosanne Menna, Cassandra Pasiak, Emily M. Johnson, and Erin Romanchych

**124 Peritraumatic Behavior Questionnaire** ..... 2187  
 Agorastos Agorastos, Abigail C. Angkaw, Heather E. Johnson, Christian J. Hansen, Camille V. Cook, and Dewleen G. Baker

**125 Post-Traumatic Growth Inventory: Overview** ..... 2203  
 Rachel F. Steffens and Michael A. Andrykowski

**126 Measurement Issues in the Application of Screening Tools for PTSD** ..... 2221  
 Colin R. Martin, Emily Savage-McGlynn, and Caroline J. Hollins Martin

**Part XV Case Studies** ..... **2235**

**127 Case Study of Prolonged Exposure Therapy for Comorbid Combat-Related Post-Traumatic Stress Disorder and Traumatic Brain Injury** ..... 2237  
 Brooke A. Fina, Tracey K. Lichner, Edna B. Foa, and Alan L. Peterson

**128 Case Study of Cognitive Behavioral Therapy for Comorbid PTSD, Insomnia, and Nightmares** ..... 2249  
 Kristi E. Pruiksma, Alma Molino, Daniel J. Taylor, Patricia A. Resick, and Alan L. Peterson

**129 Post-Traumatic Stress Disorder Formulation Within the Context of Couple Counseling: Case Study** ..... 2259  
 Amanda McGrandles and Colin R. Martin

**130 Post-Traumatic Stress Disorder and Schizophrenia: Case Study** ..... 2275  
 Mick P. Fleming and Colin R. Martin

**Part XVI Resources ..... 2285**

**131 Recommended Resources in Post-Traumatic Stress Disorders ..... 2287**  
Rajkumar Rajendram, Vinood B. Patel, and Victor R. Preedy

**Index ..... 2293**



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