Neuroimaging in Addiction presents an up-to-date, comprehensive review of the functional and structural imaging human studies that have greatly advanced our understanding of this complex disorder. Approaching addiction from a conceptual rather than a substance-specific perspective, this book integrates broad neuropsychological constructs that consider addiction as a neuroplastic process with genetic, developmental, and substance-induced contributions.

The internationally recognized contributors to this volume are leaders in clinical imaging with expertise that spans the addiction spectrum.

Following a general introduction, an overview of neural circuitry and modern non-invasive imaging techniques provides the framework for subsequent chapters on reward salience, craving, stress, impulsivity and cognition. Additional topics include the use of neuroimaging for the assessment of acute drug effects, drug-induced neurotoxicity, non-substance addictive behaviors, and the application of imaging genetics to identify unique intermediate phenotypes. The book concludes with an exploration of the future promise for functional imaging as guide to the diagnosis and treatment of addictive disorders.

Scientists and clinicians will find the material in this volume invaluable in their work towards understanding the addicted brain, with the overall goal of improved prevention and treatment outcomes for patients.

Features a Foreword by Edythe London, Director of the Center for Addictive Behaviors, University of California at Los Angeles.
ABOUT THE AUTHOR

Dr. Adinoff is the Chief of the Division on Addictions in the Department of Psychiatry at University of Texas Southwestern Medical Center in Dallas and a staff psychiatrist at the VA North Texas Health Care System. He also holds the Distinguished Professorship of Alcohol and Drug Abuse Research at UT Southwestern. Dr. Adinoff obtained his medical training at Michigan State University and completed his residency in psychiatry at Tulane University. Following a fellowship and attending position in the Laboratory of Clinical Studies at the National Institutes on Alcohol Abuse and Alcoholism, Dr. Adinoff joined the faculty of the Medical University of South Carolina as director of the substance abuse program at the Ralph H. Johnson VA Medical Center. Dr. Adinoff’s laboratory has used a variety of pharmacologic, cognitive, and behavioral probes to explore the neural and endocrine disruptions that occur following chronic cocaine or alcohol abuse and, more recently, compulsive tanning. Dr. Adinoff has published over 100 articles, reviews, and book chapters on the biology and treatment of addiction. He is also active in teaching trainees and colleagues how the brain disruptions uncovered by neuroimaging research relate to relapse and recovery.

Dr. Elliot Stein is Chief of the Neuroimaging Research Branch at the National Institute on Drug Abuse Intramural Research Program (NIDA-IRP). Prior to coming to NIDA in 2002, he was Professor of Psychiatry at the Medical College of Wisconsin (MCW), where he was also Professor in the Departments of Pharmacology, Neurobiology and the Biophysics Research Institute. He received his PhD from the University of Maryland School of Medicine in neurophysiology and completed a post-doctoral fellowship at the California Institute of Technology with James Olds, a pioneer in brain reward systems. His lab pioneered the development and application of fMRI to study the neurobiology of human drug abuse. His research program employs multiple MR imaging modalities (including MR spectroscopy, BOLD activation, functional connectivity and diffusion tensor imaging) to define those neuronal systems mediating the actions of such abused drugs as nicotine and cocaine, to determine CNS sites and mechanisms responsible for mediating drug craving and reinforcement, and how drugs interact with specific cognitive and affective processes to alter behavior. His research also incorporates preclinical models to translationally link the more mechanistic preclinical work with the more observational human studies. He has more than 400 authored papers, abstracts, reviews and book chapters in the field of drug addiction.

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