

CNS SPECTRUMS®

THE INTERNATIONAL JOURNAL OF NEUROPSYCHIATRIC MEDICINE

SUPPLEMENT

Neuropsychiatric Aspects of Parkinson's Disease: Focus on Insomnia, Daytime Sleepiness, and Psychosis

**Introduction: Taking a Closer Look at Sleep Problems
and Psychosis in Parkinson's Disease**

H.H. Fernandez

**Sleep Disorders Associated with Parkinson's Disease:
Role of Dopamine, Epidemiology, and Clinical Scales of Assessment**

S.H. Mehta, J.C. Morgan, and K.D. Sethi

Sleep Disturbances and Parkinson's Disease

J.H. Friedman and R.P. Millman

**Psychosis in Parkinson's Disease: Phenomenology, Frequency, Risk Factors,
and Current Understanding of Pathophysiologic Mechanisms**

G. Fénelon

**Course, Prognosis, and Management of Psychosis in Parkinson's Disease:
Are Current Treatments Really Effective?**

L.B. Zahodne and H.H. Fernandez

**Summary and Conclusions:
What We Have Learned About Sleep Disorders and Psychosis
After Nearly Two Centuries of Parkinson's Disease**

H.H. Fernandez

EDITOR

Eric Hollander, MD
Mount Sinai School of Medicine
New York, NY

INTERNATIONAL EDITOR

Joseph Zohar, MD
Chaim Sheba Medical Center
Tel-Hashomer, Israel

ASSOCIATE INTERNATIONAL EDITORS**EUROPE**

Donatella Marazziti, MD
University of Pisa
Pisa, Italy

MID-ATLANTIC

Dan J. Stein, MD, PhD
University of Cape Town
Cape Town, South Africa

ASIA

Shigeto Yamawaki, MD, PhD
Hiroshima University School
of Medicine
Hiroshima, Japan

CONTRIBUTING WRITERS

Gilles Fénelon, MD, PhD
Hubert H. Fernandez, MD, FAAN
Joseph H. Friedman, MD
Shyamal H. Mehta, MD, PhD
Laura B. Zahodne

FIELD EDITOR

Michael Trimble, MD, FRCP, FRPsych

COLUMNISTS

Stephen M. Stahl, MD, PhD
Dan J. Stein, MD, PhD

NEUROLOGISTS

Mitchell F. Brin, MD
University of California, Irvine
Irvine, CA
Jeffrey L. Cummings, MD
University of California, Los Angeles
Los Angeles, CA
Jerome Engel, Jr., MD, PhD
University of California, Los Angeles
Los Angeles, CA

Mark S. George, MD
Medical University of South Carolina
Charleston, SC

Richard B. Lipton, MD
Albert Einstein College of Medicine
Bronx, NY

C. Warren Olanow, MD, FRCP
Mount Sinai School of Medicine
New York, NY

Steven George Pavlakis, MD
Maimonides Medical Center
Brooklyn, NY

Stephen D. Silberstein, MD, FACP
Thomas Jefferson University
Philadelphia, PA

Michael Trimble, MD, FRCP, FRPsych
National Hospital for Neurology
and Neurosurgery
London, United Kingdom

PSYCHIATRISTS

Dennis S. Charney, MD
Mount Sinai School of Medicine
New York, NY

Dwight L. Evans, MD
University of Pennsylvania
Philadelphia, PA

Siegfried Kasper, MD
University of Vienna
Vienna, Austria

Martin B. Keller, MD
Brown Medical School
Providence, RI

Lorrin M. Koran, MD
Stanford University School of Medicine
Stanford, CA

Yves Lecrubier, MD
Hôpital de la Salpêtrière
Paris, France

Herbert Y. Meltzer, MD
Vanderbilt University Medical Center
Nashville, TN

Stuart A. Montgomery, MD
St. Mary's Hospital Medical School
London, United Kingdom

Charles B. Nemeroff, MD, PhD
Emory University School of Medicine
Atlanta, GA

Humberto Nicolini, MD, PhD
National Mexican Institute of Psychiatry
Mexico City, Mexico

Stefano Pallanti, MD, PhD
University of Florence
Florence, Italy

Katharine Phillips, MD
Brown Medical School
Providence, RI

Harold A. Pincus, MD
Columbia University
New York, NY

Scott L. Rauch, MD
Massachusetts General Hospital
Charlestown, MA

Alan F. Schatzberg, MD
Stanford University School of Medicine
Stanford, CA

Thomas E. Schlaepfer, MD
University of Bonn
Bonn, Germany

Stephen M. Stahl, MD, PhD
University of California, San Diego
La Jolla, CA

Norman Sussman, MD
New York University Medical School
New York, NY

Michael E. Thase, MD
University of Pennsylvania School of Medicine
Philadelphia, PA

Madhukar H. Trivedi, MD
University of Texas Southwestern Medical
Center
Dallas, TX

Karen Dineen Wagner, MD, PhD
The University of Texas Medical Branch
Galveston, TX

Herman G.M. Westenberg, MD
University Hospital Utrecht
Utrecht, The Netherlands

Stuart C. Yudofsky, MD
Baylor College of Medicine
Houston, TX

PUBLICATION STAFF**CEO & PUBLISHER**

Darren L. Brodeur

VP, MANAGING EDITOR

Christopher Naccari

VP, SENIOR EDITOR

Deborah Hughes

VP, BUSINESS DEVELOPMENT

Michael J. Stevinson

VP, HUMAN RESOURCES

Kimberly A. Brodeur

**SENIOR GLOBAL
ACCOUNT DIRECTOR**

Richard Ehrlich

SENIOR ACCOUNT DIRECTOR

Michelle Rushin

ACCOUNT MANAGER

Lisa Pisicchio

SENIOR EDITORS

Peter Cook—*Psychiatry Weekly*
José Ralat—*CNS Spectrums*

SENIOR ASSOCIATE EDITOR

Dena Croog—*Primary Psychiatry*

ASSOCIATE EDITOR

Lonnie Stoltzfoos—*Psychiatry Weekly*

ASSISTANT EDITORS

Carlos Perkins, Jr.
Rebecca Zerzan

SENIOR ACQUISITIONS EDITOR

Lisa Arrington

ACQUISITIONS EDITOR

Virginia Jackson

EDITORIAL INTERNS

Jaime Cunningham
Michélisa Lanche

CME DEVELOPMENT MANAGER

Shelley Wong

ASSISTANT—ENDURING MATERIALS

Sonny Santana

ART DIRECTOR

Derek Oscarson

GRAPHIC DESIGNER

Michael J. Vodilko

CHIEF FINANCIAL OFFICER

John Spano

STAFF ACCOUNTANT

Diana Tan

ACCOUNTING INTERN

Stephanie Spano

SALES & EVENT COORDINATOR

Kimberly Schneider

OFFICE MANAGER

Ronald Means

RECEPTIONIST

Kimberly Forbes

INFORMATION TECHNOLOGY

Clint Bagwell Consulting
Leah Kozak

WEB INTERN

Adam Schwartz

CORPORATION COUNSEL

Lawrence Ross, Esq.
Bressler, Amery, and Ross

TABLE OF CONTENTSNeuropsychiatric Aspects of Parkinson's Disease:
Focus on Insomnia, Daytime Sleepiness, and Psychosis

- 4 Introduction: Taking a Closer Look at Sleep Problems and Psychosis in Parkinson's Disease**
By Hubert H. Fernandez, MD, FAAN
- 6 Sleep Disorders Associated with Parkinson's Disease: Role of Dopamine, Epidemiology, and Clinical Scales of Assessment**
By Shyamal H. Mehta MD, PhD, John C. Morgan MD, PhD, and Kapil D. Sethi, MD, FRCP
- 12 Sleep Disturbances and Parkinson's Disease**
By Joseph H. Friedman, MD, and Richard P. Millman, MD
- 18 Psychosis in Parkinson's Disease: Phenomenology, Frequency, Risk Factors, and Current Understanding of the Pathophysiologic Mechanisms**
By Gilles Fénelon, MD, PhD
- 26 Course, Prognosis, and Management of Psychosis in Parkinson's Disease: Are Current Treatments Really Effective?**
By Laura B. Zahodne and Hubert H. Fernandez, MD, FAAN
- 34 Summary and Conclusions: What We Have Learned About Sleep Disorders and Psychosis After Nearly Two Centuries of Parkinson's Disease**
By Hubert H. Fernandez, MD, FAAN

Supported by funding from Kyowa Pharmaceuticals, Inc.

Founded in 1996, *CNS Spectrums* is indexed in the *Index Medicus* database and is available on MEDLINE under the citation *CNS Spectr.* *CNS Spectrums* is also the largest peer-reviewed, indexed neuropsychiatric journal in the United States.

CNS Spectrums (ISSN 1092-8529) is published monthly by MBL Communications, Inc. 333 Hudson Street, 7th Floor, New York, NY 10013.

One-year subscription rates: domestic \$120; foreign \$195; in-training \$85. For subscriptions: Tel: 212-328-0800; Fax: 212-328-0600; Web: www.cns-spectrums.com. Single issues: \$15 – email ks@mbllcommunications.com.

For editorial inquiries, please contact Deborah Hughes at dh@mbllcommunications.com. For bulk reprints, please contact Christopher Naccari at cdn@mbllcommunications.com.

Subscriber: Send address changes to *CNS Spectrums* c/o MMS, Inc., 185 Hansen Court, Suite 110, Wood Dale, IL 60191-1150.

Advertisements in *CNS Spectrums* are accepted on the basis of adherence to ethical medical standards, but acceptance does not imply endorsement by *CNS Spectrums* or the publisher.

CNS Spectrums is a registered trademark of *CNS Spectrums, LLC*, New York, NY. Permission to reproduce articles in whole or part must be obtained in writing from the publisher.



Copyright © 2008 by MBL Communications, Inc. All rights reserved. Printed in the United States.

MISSION

CNS Spectrums' editorial mission is to address relevant neuropsychiatric topics, including the prevalence of comorbid diseases among patients, and original research and reports that emphasize the profound diagnostic and physiologic connections made within the neurologic and psychiatric fields. The journal's goal is to serve as a resource to psychiatrists and neurologists seeking to understand and treat disturbances of cognition, emotion, and behavior as a direct consequence of central nervous system disease, illness, or trauma.

This supplement to *CNS Spectrums*, as well as additional enduring materials and archived issues, is available at www.cnsspectrums.com.