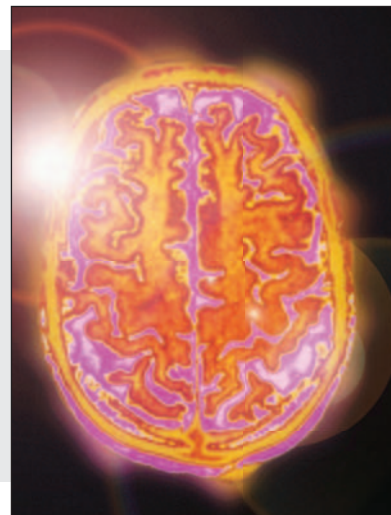


THIS ISSUE:

Neuromodulation

**Philip G. Janicak, MD; and
Mark A. Demitrack, MD**

Guest Editors



This issue of *Psychiatric Annals* considers the growing field of therapeutic neuromodulation most recently exemplified by vagus nerve stimulation (VNS) and transcranial magnetic stimulation (TMS) for major depression. In this context, Dr. Demitrack considers the role of these device-based therapies in an overall strategy to manage depression. Dr. Richelson explores the neurobiology related to their antidepressant effects. Dr. Sampson and colleagues then describe the clinical role of TMS for major depression, while Drs. Rado and Janicak review the application of VNS to treat more resistant depressive disorders.

Dr. Demitrack's article highlights the need for nonpharmacologic strategies to address the needs of a substantial number of patients who do not sufficiently benefit from or are unable to tolerate medications. In this context, he underscores the potential complementary mechanism of effect of device-based therapies as compared to medications; the additional skills required to properly administer these treatments; is-

sues about how to design studies to properly assess such treatment options; and finally how incorporation of these approaches may alter existing therapeutic algorithms for depression.

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Dr. Richelson focuses on the therapeutic mechanism of action (MOA) of VNS and TMS. He notes that most of our data about their MOA are derived from preclinical studies, which employ various models. He then explores the relationship between depressive symptoms, neuroanatomy, and neurocircuitry, emphasizing an important paradigm shift, which changes the focus from neuronal synaptic events to a "systems" approach.

Borrowing from the fields of philosophy and business, he analogizes how dysregulation in one component (eg, the limbic system) can result in its "isolation" from other system components (eg, subgenual region). This may culminate in an alteration of an entire neurocircuit's activity while simultaneously providing multiple avenues for therapeutic interventions.

Dr. Sampson and colleagues provide a thoughtful assessment of the role of TMS for major depression, carefully balancing the results of recent clinical trials with the inevitable realities of transitioning a new therapy into real world practice. Any treatment must sustain an acceptable balance between efficacy and issues of safety, tolerability, patient acceptance, and adherence.

In the context of using TMS, a variety of technical issues to help clinicians better appreciate the skills required for its appropriate and optimal administration are discussed. Further, the potential role of TMS (including its strategic relationship to medication and ECT) for various diagnostic popu-

lations, related adverse effects, and strategies to minimize risks are considered.

Drs. Rado and Janicak review the trial data, which led to an FDA approval of VNS for more treatment-resistant depression. They underscore the need for prolonged exposure over several months to maximize efficacy, positioning VNS as a long-term strategy

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in some of the most chronic and resistant depressed patients. This group is a particularly high-risk population and usually does not respond to existing therapies. Thus, despite some controversy around the approval process for VNS, they believe it needs to be available and tested in the clinical arena given the lack of other viable alternatives.

about the guest editors



Philip Gregory Janicak

Philip Gregory Janicak, MD, is Professor of Psychiatry and Medical Director, Psychiatric Clinical Research Center, Rush University Medical Center, Chicago, IL.

In addition to his private practice, Dr. Janicak serves as a consultant for the VA Chicago Health Care System, West Side Division, Chicago, IL. He is also an member of the *Psychiatric Annals* editorial board.

Dr. Janicak received his undergraduate degree from Loyola University of Chicago, and his medical degree from Loyola University of Chicago, Stritch School of Medicine. He completed his residency in Psychiatry at Foster G. McGaw Hospital, Maywood, IL.

Mark A. Demitrack, MD is Vice President and Chief Medical Officer of Neuronetics, in



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Malvern, PA. Dr. Demitrack has more than 20 years of experience in both academic and industry settings in clinical research of mood disorders and related conditions.

Prior to joining Neuronetics, Dr. Demitrack was Assistant Vice President for Global Medical Affairs in Neuroscience at Wyeth Pharmaceuticals. Dr. Demitrack also served as Medical Director of the New Antidepressant Team at Lilly Research Laboratories, where he led the registration clinical development program for the novel antidepressant, duloxetine (Cymbalta).

Prior to his tenure in private industry, Dr. Demitrack was a faculty member of the Department of Psychiatry at the University of Michigan Medical School, where he was Director of the Michigan Eating Disorders Program and received federal grant funding in clinical research activities studying the neuroendocrinology of eating disorders, chronic fatigue syndrome and fibromyalgia. Dr. Demitrack received his undergraduate degree at Columbia University, and his medical degree from the Robert Wood Johnson Medical School in New Jersey. He pursued his residency training at the University of California-San Francisco and completed a research fellowship at the National Institute of Mental Health.