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694 A Biased Perspective on Brain Imaging of ADHD

Francisco Xavier Castellanos, M.D.

This overview on MRI findings in ADHD emphasizes the importance of large-scale imaging/phenotyping studies, the within-subject reliability of structural MRI, and the transdiagnostic nature of many of the ADHD-related imaging findings.

701 Evolution, Emotion, and Episodic Engagement

Daniel S. Pine, M.D., et al.

Data on emotion, evolution, and various forms of memory are integrated to propose a framework for psychopathology research that takes into account the notable differences in the brains of rodents, nonhuman primates, and humans.

715 Evaluating the Machine Learning Literature: A Primer and User's Guide for Psychiatrists

Adrienne Grzenda, M.D., Ph.D., et al. [CME](#)

Machine learning holds promise for offering meaningful insights and applications in psychiatry through harnessing big data. An introduction into the fundamentals of machine learning provides the means to critically evaluate the emerging literature.

ARTICLES

730 Whole Brain White Matter Tract Deviation and Idiosyncrasy From Normative Development in Autism and ADHD and Unaffected Siblings Link With Dimensions of Psychopathology and Cognition

Yu-Hung Tung, M.D., et al.

Autism spectrum disorder and ADHD could be conceptualized as white matter tract deviations and idiosyncratic change from normative patterns. The common brain-cognitive relationships underlying these neurodevelopmental disorders constitute a continuum from subtle to strong phenotypic expressions.

744 A Longitudinal Study of Resting-State Connectivity and Response to Psychostimulant Treatment in ADHD

Luke J. Norman, Ph.D., et al. EDITORIAL • CME

Brain imaging research suggests that studies of resting-state functioning connectivity might inform understandings of treatment for ADHD. New data from more than 200 individuals, with more than 100 with ADHD, scanned as many as five times throughout development suggest that the relationship between treatment response and brain function evolves with time.

752 Variable Emergence of Autism Spectrum Disorder Symptoms From Childhood to Early Adulthood

Lucy Riglin, Ph.D., et al. EDITORIAL • CME

Autism spectrum disorders are understood to be conditions that arise in early childhood. However, symptoms of these disorders can manifest in many ways, including at levels insufficiently severe to qualify for a full diagnosis. New data on changes in autism spectrum disorder symptoms in young people followed into adulthood suggest that symptoms of autism spectrum disorders can arise at other points in life besides early childhood.

761 Disrupted Dorsal Mid-Insula Activation During Interoception Across Psychiatric Disorders

Camilla L. Nord, Ph.D., et al. EDITORIAL

Research on interoception, the processing of sensations coming from inside the body, has focused on the insular cortex and its role in integrating body states, emotion, and awareness. The difference between what the brain expects the body signals to be and what the actual body signal afferents are ("interoceptive prediction error") is increasingly recognized as an essential factor contributing to a range of mental disorders.

771 Neonatal Brain Response to Deviant Auditory Stimuli and Relation to Maternal Trait Anxiety

Chad M. Sylvester, M.D., Ph.D., et al.

This fMRI study measured newborn brain response to unexpected sounds and related this brain response to maternal trait anxiety, a risk factor for anxiety in offspring. Results revealed that the newborn brain has a strong response to unexpected sounds, and in many brain regions higher activity is linked to higher maternal trait anxiety. This study indicates that for some people, the developmental neurobiology of anxiety may begin at birth and include increased brain responsiveness to unexpected stimuli.

Cover: In an issue showing the promise of neuroimaging, Sylvester et al. (p. 771) use functional MRI in sleeping neonates to examine the neural systems associated with infant response to the presentation of unexpected auditory stimuli. The paradigm probes the early and fundamental automatic responses to novelty, which later in life are highly relevant to the assessment of, response to, and ability to cope with potential threat. Their work may represent the earliest brain manifestations of anxiety risk.

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Anticholinergic Medication Burden—Associated Cognitive Impairment in Schizophrenia

This cross-sectional study of 1,120 schizophrenia outpatients found that routinely used psychotropic medication regimens are associated with high anticholinergic medication burden and confer impairments across all cognitive domains, even when controlling for demographic and clinical factors. Anticholinergic burden from psychotropics may contribute to cognitive impairment in schizophrenia and ought to be accounted for in routine treatment.

Efficacy of Combining Varenicline and Naltrexone for Smoking Cessation and Drinking Reduction: A Randomized Clinical Trial

A randomized controlled trial examined efficacy of medication in people with excessive use of both cigarettes and alcohol, comparing outcomes in 165 people randomized to either combined varenicline naltrexone treatment or combined varenicline placebo treatment. Results suggest that varenicline alone may sufficiently treat excessive smoking whereas combined varenicline and naltrexone treatment may provide added benefit for excessive alcohol use over varenicline alone.

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See the table below for the articles in this month's issue that are the subject of a CME quiz.

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Evaluating the Machine Learning Literature: A Primer and User's Guide for Psychiatrists (p. 715)

A Longitudinal Study of Resting-State Connectivity and Response to Psychostimulant Treatment in ADHD (p. 744)

Variable Emergence of Autism Spectrum Disorder Symptoms From Childhood to Early Adulthood (p. 752)

History of Psychiatry *Revisit the field's rich history through the AJP Archive*

50 years ago this month: Marijuana and Health

NIMH Director Bertram Brown, M.D., introduces the centerpiece of a special section on the health consequences of marijuana, a summary of the first report to Congress on the issue by the Secretary of Health, Education, and Welfare.

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