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Information to Participants

Objectives. After evaluating a specific journal article, participants should be able to demonstrate an increase in their knowledge of clinical medicine. Participants should be able to understand the contents of a selected research or review article and to apply the new findings to their clinical practice.

Participants. This program is designed for all psychiatrists in clinical practice, residents in Graduate Medical Education programs, medical students interested in psychiatry, and other physicians who wish to advance their current knowledge of clinical medicine.

Explanation of How Physicians Can Participate and Earn Credit. In order to earn CME credit, subscribers should read through the material presented in the article. After reading the article, complete the CME quiz online at cme.psychiatryonline.org and submit your evaluation and study hours (up to *AMA PRA Category 1 Credit*[™]).

Credits. The American Psychiatric Association designates this educational activity for a maximum of 1 *AMA PRA Category 1 Credit*[™]. Physicians should only claim credit commensurate with the extent of their participation in the activity. The American Psychiatric Association is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

Information on Courses

Title: A Double-Blind Randomized Controlled Trial of *N*-Acetylcysteine in Cannabis-Dependent Adolescents

Faculty: Kevin M. Gray, M.D., Matthew J. Carpenter, Ph.D., Nathaniel L. Baker, M.S., Stacia M. DeSantis, Ph.D., Elisabeth Kryway, P.A.-C., Karen J. Hartwell, M.D., Aimee L. McRae-Clark, Pharm.D., Kathleen T. Brady, M.D., Ph.D.

Affiliations: From the Department of Psychiatry and Behavioral Sciences (K.M.G., M.J.C., E.K., K.J.H., A.L.M., K.T.B.), the Hollings Cancer Center, and the Division of Biostatistics and Epidemiology (S.M.D.), Department of Medicine (N.L.B.), Medical University of South Carolina, Charleston; and the Ralph H. Johnson Veterans Affairs Medical Center, Charleston.

Disclosures: Dr. Gray has received research funding from Merck and Supernus Pharmaceuticals. Dr. Hartwell has received research funding from Pfizer. Dr. McRae-Clark has received research funding from Shire Pharmaceuticals. Dr. Brady has received research funding from GlaxoSmithKline. The other authors report no financial relationships with commercial interests.

Discussion of unapproved or investigational use of products*: Yes

Title: Poor Nutrition at Age 3 and Schizotypal Personality at Age 23: the Mediating Role of Age 11 Cognitive Functioning

Faculty: Peter H. Venables, Ph.D., Adrian Raine, D.Phil.

Affiliations: From the Department of Psychology, University of York, Heslington, York, United Kingdom (P.H.V.); and the Departments of Criminology, Psychiatry, and Psychology, University of Pennsylvania, Philadelphia (A.R.).

Disclosures: The authors report no financial relationships with commercial interests.

Discussion of unapproved or investigational use of products*: No

Title: Persistent β_2 -Nicotinic Acetylcholinergic Receptor Dysfunction in Major Depressive Disorder

Faculty: Aybala Saricicek, M.D., Irina Esterlis, Ph.D., Kathleen H. Maloney, B.A., Yann S. Mineur, Ph.D., Barbara M. Ruf, B.A., Anjana Muralidharan, B.A., Jason I. Chen, B.A., Kelly P. Cosgrove, Ph.D., Rebecca Kerestes, Ph.D., Subroto Ghose, M.D., Ph.D., Carol A. Tamminga, M.D., Brian Pittman, M.S., Frederic Bois, Ph.D., Gilles Tamagnan, Ph.D., John Seibyl, M.D., Marina R. Picciotto, Ph.D., Julie K. Staley, Ph.D., Zubin Bhagwagar, M.D., Ph.D., M.R.C.Psych.

Affiliations: From the Department of Psychiatry, Yale University, New Haven, Conn. (A.S., I.E., K.H.M., Y.S.M., B.M.R., A.M., J.I.C., K.P.C., R.K., B.P., F.B., M.R.P., J.K.S.); the Neuroscience Group, Bristol-Myers Squibb, Wallingford, Conn. (Z.B.); the Institute for Neurodegenerative Disorders, New Haven, Conn. (G.T., J.S.); and the Department of Psychiatry, University of Texas Southwestern Medical Center, Dallas (S.G., C.A.T.).

Disclosures: Dr. Seibyl reports being a consultant for Bayer Healthcare and GE Healthcare and holding equity in Molecular Neuroimaging. Dr. Bhagwagar is a full-time employee of Bristol-Myers Squibb while retaining a faculty position at Yale University. Dr. Tamminga is on the advisory board for Intracellular Therapies; is an ad hoc consultant for PureTech Ventures, Eli Lilly, Sunovion, Astellas, Cypress, Bioscience, and Merck; is a deputy editor for the *American Journal of Psychiatry*; and is an expert witness for Finnegan Henderson Farabow Garrett & Dunner, LLP. The other authors report no financial relationships with commercial interests.

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* APA policy requires disclosure by CME authors of unapproved or investigational use of products discussed in CME programs. Off-label use of medications by individual physicians is permitted and common. Decisions about off-label use can be guided by scientific literature and clinical experience.

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Estimated Time to Complete: 1 Hour

Begin date August 1, 2012 – End date July 31, 2014

EXAMINATION QUESTIONS

Select the single best answer for each question below.

A Double-Blind Randomized Controlled Trial of N-Acetylcysteine in Cannabis-Dependent Adolescents

Kevin M. Gray, M.D., et al.

Am J Psychiatry 2012; 169:805–812

Learning Objective. The learner will appreciate the findings of a new treatment study targeting cannabis-dependent adolescents, a vulnerable group with limited existing treatment options.

1. Preclinical evidence suggests that N-acetylcysteine (NAC) exerts its effects on addictive behaviors via what neurotransmitter?

- A. Dopamine
- B. Glutamate
- C. Norepinephrine
- D. Serotonin

2. Which of the following statements best describes the trial's efficacy findings?

- A. NAC, compared to placebo, was most efficacious as a monotherapy treatment.
- B. NAC was more efficacious than contingency management.
- C. NAC, compared to placebo, was efficacious when added to psychosocial treatment.
- D. Individual cessation counseling was more efficacious than placebo.

3. Which of the following statements is true regarding the trial's safety findings?

- A. There were more adverse events in the NAC group than in the placebo group.
- B. There were more adverse events in the placebo group than in the NAC group.
- C. There was no difference in the rates of adverse events in the two treatment groups.
- D. Four participants discontinued treatment due to adverse events.

EVALUATION QUESTIONS

This evaluation form is adapted from the *MedBiquitous Journal-Based Continuing Education Guidelines 28 November 2005*.

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STATEMENT 1. The activity achieved its stated objectives.

- 1. Strongly agree
- 2. Agree
- 3. Neutral
- 4. Disagree
- 5. Strongly disagree

STATEMENT 2. The activity was relevant to my practice.

- 1. Strongly agree
- 2. Agree
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STATEMENT 3. I plan to change my current practice based on what I learned in the activity.

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STATEMENT 5. The activity provided sufficient scientific evidence to support the content presented.

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STATEMENT 6. The activity was free of commercial bias toward a particular product or company.

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Poor Nutrition at Age 3 and Schizotypal Personality at Age 23: The Mediating Role of Age 11 Cognitive Functioning

Peter H. Venables, Ph.D., Adrian Raine, D.Phil.

Am J Psychiatry 2012; 169:822–830

Learning Objective. The learner will appreciate the role of early nutritional status in understanding the development of schizotypal personality in adulthood, and the mediating effect of childhood cognitive functioning on this relationship.

- Which of the following accurately represents findings on schizotypy and IQ?
 - Poor verbal IQ was associated with cognitive-perceptual schizotypy
 - Poor performance IQ was not associated with any form of schizotypy
 - Poor verbal and performance IQ were associated with all forms of schizotypy
 - Poor performance IQ was associated with increased interpersonal and disorganized schizotypy
- Mediation effects were found for:
 - Cognitive-perceptual deficits only
 - Disorganized features only
 - Interpersonal and disorganized features only
 - All three factors of schizotypy
- The study findings suggest which of the following as a guide for future research?
 - Malnutrition may predispose to hippocampal and frontal brain deficits.
 - The malnutrition–schizotypy relationship may be confounded by psychosocial adversity.
 - The findings are not consistent with a neurodevelopmental model of schizotypy.
 - Increased IQ is associated with increased cognitive-perceptual schizotypy.

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Persistent β_2^* -Nicotinic Acetylcholinergic Receptor Dysfunction in Major Depressive Disorder

Aybala Saricicek, M.D., et al. • Am J Psychiatry 2012; 169:851–859

Learning Objective. The participant will be able to appraise the role of nicotinic acetylcholine receptor system in the pathophysiology of depression.

1. Mice lacking the β_2^* -nicotinic acetylcholine receptor subunit have been shown to be insensitive to the antidepressant effects of which of the following?

- A. Nicotine
- B. Physostigmine
- C. Scopolamine
- D. Amitriptyline

2. Which of the following observations from the study is true about β_2^* -nicotinic receptor availability (5-I-A uptake) in patients with major depression using SPECT?

- A. There was no difference between patients with major depression and healthy comparison subjects.
- B. Both acutely ill and recovered patients with major depression had significantly lower 5-I-A uptake than healthy comparison subjects.
- C. There was no difference in 5-I-A uptake between acutely ill and recovered patients with major depression.
- D. The difference in 5-I-A uptake between depressed patients and healthy comparison subjects was observed only in cortical brain regions.

3. Which of the neurotransmitter systems considered crucial in the pathophysiology of depression is modulated by nicotinic acetylcholine receptors?

- A. Serotonin
- B. Noradrenaline
- C. GABA and glutamate
- D. All of the above

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