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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: Differences in White Matter Fiber Tract Development Present From 6 to 24 Months in Infants with Autism

Faculty: Jason J. Wolff, Ph.D., Hongbin Gu, Ph.D., Guido Gerig, Ph.D., Jed T. Elison, Ph.D., Martin Styner, Ph.D., Sylvain Gouttard, M.S., Kelly N. Botteron, M.D., Stephen R. Dager, M.D., Geraldine Dawson, Ph.D., Annette M. Estes, Ph.D., Alan C. Evans, Ph.D., Heather C. Hazlett, Ph.D., Penelope Kostopoulos, Ph.D., Robert C. McKinstry, M.D., Ph.D., Sarah J. Paterson, Ph.D., Robert T. Schultz, Ph.D., Lonnie Zwaigenbaum, M.D., Joseph Piven, M.D.

Affiliations: Carolina Institute for Developmental Disabilities and the Department of Psychiatry, University of North Carolina, Chapel Hill (J.J.W., H.G., G.G., J.T.E., M.S., G.D., H.C.H., J.P.); the Scientific Computing and Imaging Institute, University of Utah, Salt Lake City (G.G., S.G.); the Department of Psychiatry and the Department of Radiology, Mallinckrodt Institute of Radiology, Washington University School of Medicine, St. Louis (K.N.B., R.C.M.); the Department of Radiology and the Department of Speech and Hearing Sciences, University of Washington, Seattle (S.R.D., A.M.E.); Autism Speaks, New York (G.D.); Montreal Neurological Institute, McGill University, Montreal (A.C.E., P.K.); the Center for Autism Research, Children's Hospital of Philadelphia, and the University of Pennsylvania, Philadelphia (S.J.P., R.T.S.); and the Department of Pediatrics, University of Alberta, Edmonton (L.Z.).

Disclosures: Dr. Evans reports having a 20% equity position in Biospective, Inc., an imaging contract research organization, as founder, and receiving a consulting fee from Biospective. All other authors report no financial relationships with commercial interests.

Discussion of unapproved or investigational use of products*: No

Title: Antidepressants May Mitigate the Effects of Prenatal Maternal Anxiety on Infant Auditory Sensory Gating

Faculty: Sharon K. Hunter, Ph.D., Jordan H. Mendoza, M.D., Kimberly D'Anna, Ph.D., Gary O. Zerbe, Ph.D., LizBeth McCarthy, M.D., Camille Hoffman, M.D., Robert Freedman, M.D., Randal G. Ross, M.D.

Affiliations: Departments of Psychiatry (S.K.H., K.D., R.F., R.G.R.), Obstetrics and Gynecology (J.H.M., C.H.), and Biostatistics and Informatics (G.O.Z.), University of Colorado Denver, Aurora; and the Department of Obstetrics and Gynecology, Denver Health Medical Center, Denver (L.M., C.H.).

Disclosures: Dr. Zerbe has equity interest in Abbott Laboratories, Johnson & Johnson Pharmaceuticals, Merck, and Pfizer and has a contract with Merck as a statistician in a study of a booster dose of vaccine for varicella zoster. Dr. Ross has equity interest in Johnson & Johnson Pharmaceuticals. All other authors report no financial relationships with commercial interests.

Discussion of unapproved or investigational use of products*: Yes

Title: Maternal Antibodies to Dietary Antigens and Risk for Nonaffective Psychosis in Offspring

Faculty: Håkan Karlsson, Ph.D., Åsa Blomström, M.D., Susanne Wicks, Ph.D., Shuojia Yang, M.Sc., Robert H. Yolken, M.D., Christina Dalman, M.D., Ph.D.

Affiliations: Department of Neuroscience (H.K.) and the Department of Public Health Sciences (A.B., S.W., C.D.), Division of Public Health Epidemiology, Karolinska Institute, Stockholm; and the Stanley Division of Developmental Neurovirology, Department of Pediatrics, Johns Hopkins University School of Medicine, Baltimore (S.Y., R.H.Y.).

Disclosures: Dr. Yolken is a member of the Stanley Medical Research Institute Board of Directors and Scientific Advisory Board; the terms of this arrangement are managed by the Johns Hopkins University in accordance with its conflict of interest policies. The other authors report no financial relationships with commercial interests.

Discussion of unapproved or investigational use of products*: No

* 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 June 1, 2012 – End date May 31, 2014

EXAMINATION QUESTIONS

Select the single best answer for each question below.

Differences in White Matter Fiber Tract Development Present From 6 to 24 Months in Infants with Autism

Jason J. Wolff, Ph.D., et al.
Am J Psychiatry 2012; 169:589–600

Learning Objective. The participant will recognize the basic concepts of diffusion tensor imaging of infants at risk for autism.

1. Fractional anisotropy values may be generated for white matter fiber tracts. Values in the high range (e.g., 0.8–1.0) are indicative of what quality?

A. Isotropic diffusion
B. Transverse diffusion
C. Weak directional diffusion
D. Strong directional diffusion

2. At 6 months old, cross-sectional fractional anisotropy values for autism spectrum disorder (ASD)-negative and ASD-positive groups differed for which of the following white matter tracts?

A. Right uncinate fasciculus
B. Left inferior longitudinal fasciculus
C. Left anterior thalamic radiation
D. Splenium of corpus callosum

3. In typical white matter development during infancy, what two processes combine to ensure efficient structural connectivity between brain regions?

A. Axon pruning and myelination
B. Apoptosis and glial cell proliferation
C. Neural refinement and canalization
D. Microglial activation and synaptogenesis

EVALUATION QUESTIONS

This evaluation form is adapted from the MedBiquitous Journal-Based Continuing Education Guidelines 28 November 2005. This evaluation will appear online at the end of each CME course. Participants **must** *complete this evaluation in order to receive credit. Select the response which best indicates your reaction to the following statements about this activity.*

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
3. Neutral
4. Disagree
5. Strongly disagree

STATEMENT 3. I plan to change my current practice based on what I learned in the activity.
1. Strongly agree
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STATEMENT 4. The activity validated my current practice.
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STATEMENT 5. The activity provided sufficient scientific evidence to support the content presented.
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Antidepressants May Mitigate the Effects of Prenatal Maternal Anxiety on Infant Auditory Sensory Gating

Sharon K. Hunter, Ph.D., et al. • Am J Psychiatry 2012; 169:616–624

Learning Objective. The participant will appreciate the effects of prenatal maternal anxiety on the offspring's neurocognitive development.

1. Which psychiatric and cognitive symptoms are associated with prenatal exposure to elevated maternal depression, anxiety, and other forms of stress?

A. Increased rates of attentional, anxious, and depressive symptoms
B. Poorer performance on neurocognitive tests of attention and memory
C. Increased risk for autism and schizophrenia
D. All of the above

2. P50 sensory gating reflects both cerebral excitation in response to an initial stimulus and inhibition of response in response to a second stimulus. In this study, maternal anxiety disorder(s), in the absence of antidepressant treatment, affected the response to which stimulus?

A. Response to the second stimulus only
B. Response to the first stimulus only
C. Neither response to the first stimulus nor response to the second stimulus
D. Responses to both the first and second stimulus

3. Infant P50 sensory gating is a putative biomarker of the early expression of attentional function. In this study, antidepressant treatment for the mothers with a history of anxiety disorder(s) was associated with which of the following findings regarding sensory gating?

A. Antidepressant treatment was associated with more impaired sensory gating.
B. Antidepressant treatment was associated with better sensory gating.
C. Antidepressant treatment was associated with better sensory gating only if the mother had a history of anxiety and not another disorder.
D. There was no detectable effect of antidepressants on sensory gating.

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Maternal Antibodies to Dietary Antigens and Risk for Nonaffective Psychosis in Offspring

Håkan Karlsson, Ph.D., et al.
Am J Psychiatry 2012; 169:625–632

Learning Objective. The participant will appreciate the potential implications for dietary-related immune responses to influence risk for psychosis in the offspring of mothers with IgG antibodies to gluten and milk protein.

1. What is the primary origin of immunoglobulin G (IgG) in neonatal blood?

A. Maternal
B. Fetal
C. Paternal
D. All of the above

2. What is the purpose of the transplacental transfer of IgG that occurs during pregnancy?

A. To prevent rejection of the fetus
B. To provide passive immunization of the fetus
C. To facilitate oxygen uptake of the fetus
D. To stimulate the fetal immune system

3. Which of the following represents a mechanism that may explain the association between maternal antibodies to gliadin and development of psychosis in offspring?

A. Common genetic factors for increased gluten sensitivity and psychotic disorders
B. Chronic maternal inflammation that affects the developing fetus
C. Maternal diet influencing gluten exposure during early life
D. All of the above

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