

2017 Summary of Advances Discussion

IACC Full Committee Meeting
January 17, 2018



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Summary of Advances



- Annual publication required by the Autism CARES Act
- Lay-friendly summaries of the 20 most significant advances in ASD biomedical and services research, as selected by the IACC
- Typically includes articles addressing all 7 topic areas of the IACC Strategic Plan

Summary of Advances Process



- Monthly emails to solicit article nominations from IACC members
- Advances compiled quarterly and discussed at IACC meetings
- **At January IACC meeting, discussion of top articles among those nominated**
- IACC members vote on top 20 articles to be included in 2017 Summary of Advances – **ballots due February 2, 2018**
- Tie-breaker vote (if necessary)

Summary of Advances Process



- Selected articles are summarized
- Nominated articles not selected are listed in the appendix
- Draft publication is prepared and sent out to committee for very brief review
- Final publication is prepared for release
- Target for release – April 2018 IACC meeting

2017 IACC Summary of Advances Nominations Statistics



- 11 IACC members submitted a total of 81 nominations:
 - Question 1 (Diagnosis & Screening): 13
 - Question 2 (Biology): 12
 - Question 3 (Risk Factors): 19
 - Question 4 (Treatments & Interventions): 14
 - Question 5 (Services): 10
 - Question 6 (Lifespan Issues): 9
 - Question 7 (Infrastructure & Surveillance): 4

2017 Summary of Advances Nominations October – December 2017



Joshua A. Gordon, M.D., Ph.D.
Director, National Institute of Mental Health
Chair, IACC

Question 1: Screening and Diagnosis



AUTISM
RESEARCH
January 2017 | Volume 10 | Number 1

Sep 2017

Adaptive behavior in autism: minimal clinically important differences on the Vineland-II.

Chatham CH, Taylor KI, Charman T, Liogier D'ardhuy X, Eule E, Fedele A, Hardan AY, Loth E, Murtagh L, Del Valle Rubido M, San Jose Caceres A, Sevigny J, Sikich L, Snyder L, Tillmann JE, Ventola PE, Walton-Bowen KL, Wang PP, Willgoss T, Bolognani F.

The International Journal of Research and Practice Volume 21 Number 5 July 2017

autism

Nov 2017

Race influences parent report of concerns about symptoms of autism spectrum disorder.

Donohue MR, Childs AW, Richards M, Robins DL.

Question 1: Screening and Diagnosis



*Journal of Autism
and Developmental Disorders*

Sep 2017

A prospective study of the concordance of DSM-IV and DSM-5 diagnostic criteria for autism spectrum disorder.

Mazurek MO, Lu F, Symecko H, Butter E, Bing NM, Hundley RJ, Poulsen M, Kanne SM, Macklin EA, Handen BL.

*Journal of Autism
and Developmental Disorders*

Apr 2017

A comprehensive examination of reading heterogeneity in students with high functioning autism: distinct reading profiles and their relation to autism symptom severity.

McIntyre NS, Solari EJ, Grimm RP, E Lerro L, E Gonzales J, Mundy PC.

Question 1: Screening and Diagnosis



*Journal of Autism
and Developmental Disorders*

Nov 2017

Screening for autism with the SRS and SCQ: variations across demographic, developmental and behavioral factors in preschool children.

Moody EJ, Reyes N, Ledbetter C, Wiggins L, DiGuseppi C, Alexander A, Jackson S, Lee LC, Levy SE, Rosenberg SA.

Journal of
& **Developmental
Behavioral Pediatrics**

Apr 2017

Parent-reported strengths in children with autism spectrum disorders at the time of an interdisciplinary diagnostic evaluation.

Sabapathy T, Madduri N, Deavenport-Saman A, Zamora I, Schragger SM, Vanderbilt DL.

Question 1: Screening and Diagnosis



Official Journal of the Society of Biological Psychiatry

**Biological
Psychiatry**

Aug 2017

Increased Extra-axial Cerebrospinal Fluid in High-Risk Infants Who Later Develop Autism.

Shen MD, Kim SH, McKinstry RC, Gu H, Hazlett HC, Nordahl CW, Emerson RW, Shaw D, Elison JT, Swanson MR, Fonov VS, Gerig G, Dager SR, Botteron KN, Paterson S, Schultz RT, Evans AC, Estes AM, Zwaigenbaum L, Styner MA, Amaral DG, Piven J; Infant Brain Imaging Study Network; Infant Brain Imaging Study Network, The Infant Brain Imaging Study (IBIS) Network is a National Institutes of Health–funded Autism Center of Excellence project and consists of a consortium of eight universities in the United States and Canada, Piven J, Hazlett HC, Chappell C, Dager S, Estes A, Shaw D, Botteron K, McKinstry R, Constantino J, Pruett J, Schultz R, Zwaigenbaum L, Elison J, Evans AC, Collins DL, Pike GB, Fonov V, Kostopoulos P, Das S, Gerig G, Styner M, Gu H.

Question 2: Underlying Biology



PNAS

Proceedings of the National Academy of Sciences of the United States of America www.pnas.org

Oct 2017

Longitudinal identification of clinically distinct neurophenotypes in young children with fragile X syndrome.

Bruno JL, Romano D, Mazaika P, Lightbody AA, Hazlett HC, Piven J, Reiss AL.

The Journal of Child
Psychology and Psychiatry

Oct 2017

Examining bidirectional effects between the autism spectrum disorder (ASD) core symptom domains and anxiety in children with ASD.

Duvekot J, van der Ende J, Verhulst FC, Greaves-Lord K.

Question 2: Underlying Biology



***Cerebral* CORTEX**

Mar 2017

Joint attention and brain functional connectivity in infants and toddlers.

Eggebrecht AT, Elison JT, Feczko E, Todorov A, Wolff JJ, Kandala S, Adams CM, Snyder AZ, Lewis JD, Estes AM, Zwaigenbaum L, Botteron KN, McKinstry RC, Constantino JN, Evans A, Hazlett HC, Dager S, Paterson SJ, Schultz RT, Styner MA, Gerig G, Das S, Kostopoulos P; IBIS Network, Schlaggar BL, Petersen SE, Piven J, Pruett JR Jr.

AUTISM
RESEARCH
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Aug 2017

I tawt i tauw a puddy tat: Gestures in canary row narrations by high-functioning youth with autism spectrum disorder.

Silverman LB, Eigsti IM, Bennetto L.

Question 2: Underlying Biology



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RESEARCH
January, 2017 | Volume 10 | Number 1

Oct 2017

What will my child's future hold? phenotypes of intellectual development in 2-8-year-olds with autism spectrum disorder.

Solomon M, Iosif AM, Reinhardt VP, Libero LE, Nordahl CW, Ozonoff S, Rogers SJ, Amaral DG.

The Journal of
Comparative Neurology

Feb 2018

Protracted dendritic growth in the typically developing human amygdala and increased spine density in young ASD brains.

Weir RK, Bauman MD, Jacobs B, Schumann CM.

Question 3: Risk Factors



Oct 2017

Cross-tissue integration of genetic and epigenetic data offers insight into autism spectrum disorder.

Andrews SV, Ellis SE, Bakulski KM, Sheppard B, Croen LA, Hertz-Picciotto I, Newschaffer CJ, Feinberg AP, Arking DE, Ladd-Acosta C, Fallin MD.

The American Journal of
Psychiatry

Jun 2017

Identification of developmental and behavioral markers associated with genetic abnormalities in autism spectrum disorder.

Bishop SL, Farmer C, Bal V, Robinson EB, Willsey AJ, Werling DM, Havdahl KA, Sanders SJ, Thurm A.

Question 3: Risk Factors



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Nov 2017

Prenatal exposure to fever is associated with autism spectrum disorder in the boston birth cohort.

Brucato M, Ladd-Acosta C, Li M, Caruso D, Hong X, Kaczaniuk J, Stuart EA, Fallin MD, Wang X.



Paediatric and
Perinatal Epidemiology

Oct 2017

Maternal multivitamin intake, plasma folate and vitamin B12 levels and autism spectrum disorder risk in offspring.

Raghavan R, Riley AW, Volk H, Caruso D, Hironaka L, Sices L, Hong X, Wang G, Ji Y, Brucato M, Wahl A, Stivers T, Pearson C, Zuckerman B, Stuart EA, Landa R, Fallin MD, Wang X.

Question 3: Risk Factors



npj | Genomic Medicine

Oct 2017

A framework to identify contributing genes in patients with Phelan-McDermid syndrome.

Tabet A, Rolland T, Ducloy M, Lévy J, Buratti J, Mathier A, Haye D, Perrin L, Dupont C, Passemard S, Capri Y, Verloes A, Drunat, S, Keren B, Mignot C, Marey I, Jacquette A, Whalen S, Pipras E, Benzacken B, Chantot-Bastaraud S, Afenjar A, Héron D, Le Caignec C, Beneteau C, Pichon O, Isidor B, David A, El Khattabi L, Kemeny S, Gouas L, Vago P, Mosca-Boidron A, Faivre L, Missirian C, Philip N, Sanlaville D, Edery P, Satre V, Coutton C, Devillard F, Dieterich K, Vuillaume M, Rooryck C, Lacombe D, Pinson L, Gatinois V, Puechberty J, Chiesa J, Lespinasse J, Dubourg C, Quelin C, Fradin M, Journal H, Toutain A, Martin D, Benmansour A, Leblond CS, Toro R, Amsellem F, Delome R, Bourgeron T.

Question 3: Risk Factors



Oct 2017

The association between maternal use of folic acid supplements during pregnancy and risk of autism spectrum disorders in children: a meta-analysis.

Wang M, Li K, Zhao D, Li L.



Mar 2017

Severity of ASD symptoms and their correlation with the presence of copy number variations and exposure to first trimester ultrasound.

Webb SJ, Garrison MM, Bernier R, McClintic AM, King BH, Mourad PD.

Question 4: Treatments and Interventions



*Journal of Autism
and Developmental Disorders*

Dec 2017

Feasibility, acceptability and preliminary treatment outcomes in a school-based CBT intervention program for adolescents with ASD and anxiety in Singapore.

Drmic IE, Aljunied M, Reaven J.

Journal of the American Academy of
**CHILD & ADOLESCENT
PSYCHIATRY**

Oct 2017

A randomized, placebo-controlled trial of metformin for the treatment of overweight induced by antipsychotic medication in young people with autism spectrum disorder: open-label extension.

Handen BL, Anagnostou E, Aman MG, Sanders KB, Chan J, Hollway JA, Brian J, Arnold LE, Capano L, Williams C, Hellings JA, Butter E, Mankad D, Tumuluru R, Kettel J, Newsom CR, Peleg N, Odrobina D, McAuliffe-Bellin S, Marler S, Wong T, Wagner A, Hadjiyannakis S, Macklin EA, Veenstra-VanderWeele J.

Question 4: Treatments and Interventions



Dec 2017

Intolerance of uncertainty predicts anxiety outcomes following CBT in youth with ASD.

Keefer A, Kreiser NL, Singh V, Blakeley-Smith A, Duncan A, Johnson C, Klinger L, Meyer A, Reaven J, Vasa RA.

The International Journal of Research and Practice • Volume 21 Number 5 July 2017



Dec 2017

A pilot investigation of an iOS-based app for toilet training children with autism spectrum disorder.

Mruzek DW, McAleavey S, Loring WA, Butter E, Smith T, McDonnell E, Levato L, Aponte C, Travis RP, Aiello RE, Taylor CM, Wilkins JW, Corbett-Dick P, Finkelstein DM, York AM, Zanibbi K.

Question 4: Treatments and Interventions



PNAS

Proceedings of the National Academy of Sciences of the United States of America www.pnas.org

Jul 2017

Intranasal oxytocin treatment for social deficits and biomarkers of response in children with autism.

Parker KJ, Oztan O, Libove RA, Sumiyoshi RD, Jackson LP, Karhson DS, Summers JE, Hinman KE, Motonaga KS, Phillips JM, Carson DS, Garner JP, Hardan AY.

AHRQ Comparative
Effectiveness Reviews

May 2017

Interventions targeting sensory challenges in children with autism spectrum disorder – an update [internet].

Weitlauf AS, Sathe N, McPheeters ML, Warren ZE.

Question 5: Services



International Review of Research
in Developmental Disabilities

2017

Strengthening informal supports to promote behavioral health of youth with intellectual and/or developmental disabilities in rural communities.

Hepburn SL.

The International Journal of Research and Practice • Volume 21 Number 5 July 2017

autism

Jul 2017

Associations of quality of life with health-related characteristics among children with autism.

Kuhlthau KA, McDonnell E, Coury DL, Payakachat N, Macklin E.

Question 5: Services



*Journal of Autism
and Developmental Disorders*

Nov 2017

Assessing quality of program environments for children and youth with autism: Autism Program Environment Rating Scale (APERS).

Odom SL, Cox A, Sideris J, Hume KA, Hedges S, Kucharczyk S, Shaw E, Boyd BA, Reszka S, Neitzel J.

Question 6: Lifespan Issues



The International Journal of Research and Practice ● Volume 21 Number 5 July 2017

autism

Jul 2017

Factors associated with sustained community employment among adults with autism and co-occurring intellectual disability.

Chan W, Smith LE, Hong J, Greenberg JS, Lounds Taylor J, Mailick MR.

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Dec 2017

Cognitive enhancement therapy for adult autism spectrum disorder: Results of an 18-month randomized clinical trial.

Eack SM, Hogarty SS, Greenwald DP, Litschge MY, Porton SA, Mazefsky CA, Minshew NJ.

Question 6: Lifespan Issues



Jul 2017

Assessing autism in adults: an evaluation of the Developmental, Dimensional and Diagnostic Interview-Adult Version (3Di-Adult).

Mandy W, Clarke K, McKenner M, Strydom A, Crabtree J, Lai MC, Allison C, Baron-Cohen S, Skuse D.

The International Journal of Research and Practice Volume 21 Number 5 July 2017



Oct 2017

First impressions of adults with autism improve with diagnostic disclosure and increased autism knowledge of peers.

Sasson NJ, Morrison KE.