

MINIMALLY CHILDREN WITH AUTISM

SUMMARY OF NIH WORKSHOP APRIL 13-14, 2010

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Justin Daigle (above and top right), 7, took two years to learn to brush his teeth. "We're paving this road every day," says his mother, Allison (top left).

Planning committee

Co-Chairs:

Judith Cooper – NIDCD

Connie Kasari (UCLA) & Helen Tager-Flusberg (BU)

Committee Members

Frank Avenilla (NIMH), Lisa Gilotty (NIMH), Dan Hall (NIMH/NDAR), Alice Kau (NICHD), Lana Shekim (NIDCD), Ann Wagner (NIMH)

Goals

Focus: Minimally verbal school-aged children with ASD

1. What do we know?
2. What are the gaps in our knowledge based on current research?
3. What are the critical opportunities for advancing knowledge in this area?

Participants

Grace Baranek (UNC)

April Benasich (Rutgers)

Nancy Brady (U Kansas)

John Connolly
(McMaster)

Nicole Gage (UCI)

Barry Gordon (Hopkins)

Portia Iversen

Rebecca Landa (KKI)

Janice Light (Penn
State)

Catherine Lord
(Cornell)

Mark Mahone (KKI)

Stewart Mostofsky (KKI)

Rhea Paul (Yale)

MaryAnn Ronski (GSU)

Laura Schreibman
(UCSD)

Larry Shriberg (UW)

Three Major Topics

1. Who are these individuals?
1. How can we assess their skills and knowledge across different domains?
1. What interventions are potentially effective in improving spoken language and communication in these children?

Summary of Workshop

Tager-Flusberg, H. & Kasari, C. (2013/in press).
Minimally verbal school-aged children with autism:
The neglected end of the spectrum.
Autism Research.

Who Are These Individuals?

- This is highly heterogeneous population with no single set of defining characteristics
- It is a significant challenge to assess their underlying skills and knowledge – current measurement tools have low validity/reliability
- It *is* possible to begin speaking after age 5 - almost all who do begin to between 5 and 7; only 1 case after puberty
- Almost no research focuses on this group

Assessment

Novel implicit measures of cognitive and brain function

1. Eye-tracking measures of language comprehension and processing – demonstrated reliability and validity
2. Magnetoencephalography (MEG) – to assess auditory processing impairments
3. Electroencephalography (EEG/ERP) – to assess brain processing of language – words, grammar and discourse

Novel Technologies



Eye-Tracking

MEG



EEG/ERP

What Interventions are Effective?

Non-Augmentative:

- Behavioral approaches – classic DTT; newer naturalistic (PRT; milieu etc.) can be effective with some children (e.g., those who engage with toys prior to intervention)
- Studies based on teaching core skills – language precursors (engagement, joint attention)

Augmentative:

- Covers all non-speech means for communication (e.g., PECS, Sign, SGD – speech generating devices etc.)
- Can be effective in increasing communication; in decreasing challenging behavior
- Limited real world use in the classroom and sometimes in homes

Future Directions in Interventions Research

- Insufficient description of participants
- Limitations in study designs (mostly single case) – need for flexible designs; RTI etc., longer term outcomes
- Predictors of responses to specific interventions – match intervention to child characteristics
- Measurement issues – what is meaningful change – in spoken language; communication; other areas?
- Urgent need for *novel* interventions for this population, who are often excluded from research studies, even on efficacy of EI