ENHANCED MILIEU TEACHING AND CHILDREN WITH DEVELOPMENTAL DISABILITIES: EVIDENCE AND APPLICATION

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• Staff of the Alpha School, Cape Town
Today’s Talk

• Early communication and evidence based intervention
• Enhanced Milieu Teaching (EMT)
  • Brief overview
  • Summary of research evidence
• EMT active ingredients
  • What children bring to EMT
  • Additions to core EMT
• Adapting EMT to fit learner characteristics
  • Profiles of four populations-
  • Adaptations to maximize social communication outcomes
  • Research on adaptions
• Discussion --The Intervention Tool Box: Tools for Adapting EMT
• Summary and Conclusions
Communication As A Developmental Marker

Communication is a key indicator of both positive and delayed development

Complex behavior vulnerable to genetic and environmental influences

Social communication deficits are an early indicator of autism as well as global developmental delay

Early communication delays, even in children with typical cognition have long term impacts on social and academic outcomes
Evidence-based Treatments for Early Communication Delays

- Communication is a frequently target outcomes of a range of interventions
- Communication specific interventions are among the most established early interventions
- Results of two recent meta analysis support the effectiveness of early language intervention
  - Hampton & Kaiser, in press
    - Spoken language outcomes for children with ASD
    - .26 ES (.11-.42) for overall language outcomes
    - .42 ES (.24-.60) for clinician plus parent
  - Roberts & Kaiser, 2011
    - .48 ES (.24-.63) Expressive vocabulary
    - .82 (.37-1.38) Expressive morpho-syntax Parent implemented intervention more effective
    - Across populations

UCT March 2016
Naturalistic Developmental Behavioral Interventions

• Delivered in naturalistic and interactive social contexts, such as play and daily routines
• Involve child-directed teaching strategies, such as use of child-preferred materials
• Based on empirically-based intervention methods derived from both the principles of behavioral learning and developmental science

What is Enhanced Milieu Teaching?

- EMT is a naturalistic, conversation-based interventions that uses child interests and initiations as opportunities to model and prompt language in everyday contexts.
- EMT can be used throughout the day as part of the everyday interactions.
- EMT is an evidence-based intervention with over 20 years of research.
- EMT is an effective intervention.
EMT is effective

- Increases child use of language targets
  - Early syntactic forms (Kaiser & Hester, 1994)
  - Moderately complex syntax (Warren & Kaiser, 1986)
- Generalization across settings, people, and language concepts (Warren & Bambara, 1989; Goldstein & Mousetis, 1989; Kaiser & Roberts, 2012; Wright et al., 2013)
EMT Active Ingredients

- Environmental arrangement to promote communication
- Play and engage
- Follow child’s lead in conversation and activity
- Respond to child communication
- Model target language in context
- Expand child communication
- Use Time Delays to elicit requests or initiations
- Use Milieu Teaching Prompts to promote practice
- Teach across settings, activities and partners
EMT Example
What Children Bring to EMT

- Access to Input
- Intelligibility
- Fluency

- Person
- Object
- Activity

- Rate
- Form
- Functions
- Transparency to partners

- Imitation
- Auditory memory
- Efficiency

Mode

Engagement Strategies

Baseline Communication

Learning Strategies

Learning Strategies

Baseline Communication

Engagement Strategies

Mode
EMT Modifications to Fit What Children Bring

- Provide alternative mode
- Signs
- SGD
- Teach partners mode

- Teach play
- Increase person engagement
- Teach coordinated joint attention

- Teach joint attention skills
- Support partner comprehension

- Teach imitation
- Add discrete trials
- Increase dosage

Mode

Baseline Communication

Engagement Strategies

Learning Strategies
Modifications of EMT

- **JASPER + EMT [J-EMT]**
  - Teaches joint attention, symbolic play, regulation

- **JASPER + EMT + AAC [J-EMT+ SGD ; Words + Signs]**
  - Teaches joint attention, symbolic play, regulation
  - Includes speech generating device or signs for input and output

- **Phonological Emphasis + EMT [PE-EMT]**
  - Models speech targets
  - Recasts for speech errors

- + Discrete trial training  [*Rescue protocol; preteaching protocol]*

- + Support Partners to use EMT, child mode,  [*Parent Plus Therapist*]
## Population Specific Modifications

<table>
<thead>
<tr>
<th>Population</th>
<th>Mode</th>
<th>Engagement</th>
<th>Learning Strategy</th>
<th>Baseline Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toddlers with Rec/Express Delay</td>
<td>None</td>
<td>None</td>
<td>Support partner as teacher</td>
<td></td>
</tr>
<tr>
<td>Down syndrome</td>
<td>+ Sign or SGD</td>
<td>Teach play, object engagement, sustained attention</td>
<td>+Dosage</td>
<td>Support partner comprehension and as teacher</td>
</tr>
<tr>
<td>Cleft</td>
<td>+ Speech targets</td>
<td>None</td>
<td>+Recast + Speech practice</td>
<td></td>
</tr>
<tr>
<td>Minimally Verbal ASD</td>
<td>+ SGD</td>
<td>Teach play, engagement</td>
<td>+Dosage +Rescue or Pre-teach Protocol: imitation, receptive language</td>
<td>Teach joint attention skills, symbolic play, Support partner as teacher</td>
</tr>
</tbody>
</table>
Including Parents in Intervention

- Quantity and quality of linguistic input provided by parents impacts child language development (Hart & Risley, 1995; Smith, Landry, & Swank, 2000; Tamis-LeMonda, Bornstein, & Baumwell, 2001)
- Teaching parents is cost effective (Gibbard, 2004)
- Including parents facilitates generalization to everyday contexts (Kashinath, Woods & Goldstein, 2006; Wright et al, )
- Parent-implemented interventions have relatively consistent effects for children with expressive language impairment (Roberts & Kaiser, 2011)
  - Children have on average 53 more words ($g=.38$)
- Including parents of children with ASD improves spoken language outcomes (Hampton & Kaiser, in press)
The Effects of a Parent-Implemented Language Intervention for Children With Language Impairments

Megan Y. Roberts, PhD, CCC-SLP
Ann P. Kaiser, PhD

## Toddlers with Receptive/Expressive Delays

<table>
<thead>
<tr>
<th>Communication Challenges</th>
<th>Adaptations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem behaviors</td>
<td>Increase attention to positive behavior, plan routines, teach communicative alternatives</td>
</tr>
<tr>
<td>Low rates of talking</td>
<td>Use responsiveness strategies to increase rate</td>
</tr>
<tr>
<td>Low lexical diversity</td>
<td>Model expanded vocabulary before and during early syntax targets</td>
</tr>
</tbody>
</table>
## Toddlers with Receptive/Expressive Delays

<table>
<thead>
<tr>
<th>Study Component</th>
<th>Description</th>
</tr>
</thead>
</table>
| Design          | Randomized Clinical Trial  
45 Intervention , 43 Control |
| Intervention    | EMT with Play Skills  
28 sessions (4 workshops, 14 clinic, 10 home across routines)  
Parent + Therapist |
| Measures        | Pre, 6 wks, 12 wks, 18 wks (end of intervention), 6 month follow-up, 12-month follow-up  
Standardized, observational, parent report |
| Participants    | Average age: 31 months  
Average Bayley Cognitive Score: 85  
Gender: 83% male  
PLS-4: 70 |

Kaiser, Camarata, & Roberts (2011) IES R324A090181; Roberts & Kaiser, 2015
Parent + Therapist EMT

Enhanced Milieu
Teaching with a Toddler
Outcomes Intervention vs. Control

<table>
<thead>
<tr>
<th></th>
<th>Intervention</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expressive language (PLS-4)</td>
<td>84</td>
<td>80</td>
</tr>
<tr>
<td>Receptive language (PLS-4)</td>
<td>86</td>
<td>77</td>
</tr>
<tr>
<td>Expressive vocabulary (EOWPVT-3)</td>
<td>76</td>
<td>70</td>
</tr>
<tr>
<td>Receptive Vocabulary (PPVT-4)</td>
<td>94</td>
<td>86</td>
</tr>
</tbody>
</table>

$d = 0.3$
Outcomes  Intervention vs. Control: Number of Different Words

<table>
<thead>
<tr>
<th>Month</th>
<th>Treatment</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start</td>
<td>19</td>
<td>18</td>
</tr>
<tr>
<td>Month 1</td>
<td>32</td>
<td>26</td>
</tr>
<tr>
<td>Month 2</td>
<td>47</td>
<td>32</td>
</tr>
<tr>
<td>Month 3</td>
<td>55</td>
<td>38</td>
</tr>
</tbody>
</table>

MCDI
T: 264
C: 215
D = 0.4

Treatment vs. Control:
- Number of Different Words
- Comparison at different time points (Month 1, Month 2, Month 3)
Number of Different Words
Outcomes at 6 and 12 months post intervention compared to typical children

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
<th>6 months</th>
<th>12 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>17</td>
<td>37</td>
<td>63</td>
<td>102</td>
</tr>
<tr>
<td>Control</td>
<td>19</td>
<td>55</td>
<td>82</td>
<td>109</td>
</tr>
<tr>
<td>Typical</td>
<td>76</td>
<td>107</td>
<td>138</td>
<td>163</td>
</tr>
</tbody>
</table>

Effect Sizes:
- Treatment: d = -.178*
- Control: d = -.136*
- Typical: d = -.133*

Note: ns indicates non-significant effect.
Additional Outcomes

- Children receiving EMT
  - More talkative
  - Fewer behavior problems

- Pending
  - Kindergarten and Grade 1 outcomes for language, reading and behavior
Ongoing Studies

An efficacy trial of J-EMT with Toddlers with ASD

- 90 2-3 year old children with ASD
- RCT Treatment vs. Control
- JASPER-EMT delivered in the home
- Individualized based on naturally occurring home routines
  - Parent training
    - Play and routines
COMMUNICATION INTERVENTIONS FOR MINIMALLY VERBAL CHILDREN WITH AUTISM


Clinical Trials Number: NCT01013545. This study was funded by Autism Speaks #5666, Characterizing Cognition in Nonverbal Individuals with Autism (CCNIA).
## Children with Autism

<table>
<thead>
<tr>
<th>Communication Challenges</th>
<th>Adaptations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficulty with joint engagement</td>
<td>Model and teach joint engagement behavior</td>
</tr>
<tr>
<td>Few play skills and brief duration of play</td>
<td>Model and teach play skills</td>
</tr>
<tr>
<td>Requesting rather than commenting</td>
<td>Model commenting, limit requesting</td>
</tr>
<tr>
<td>Interfering behavior</td>
<td>Determine which behaviors are communicative; respond differentially</td>
</tr>
<tr>
<td>Very low rate spoken language</td>
<td>Add SGD</td>
</tr>
</tbody>
</table>
# Children with Autism

<table>
<thead>
<tr>
<th>Study Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Design</strong></td>
<td>SMART Design Randomized Clinical Trial</td>
</tr>
<tr>
<td><strong>Intervention</strong></td>
<td>EMT + Joint Attention and Symbolic Play (J-EMT) 48 sessions in the clinic (24 therapist only, 24 parent + therapist) with/ without SGD</td>
</tr>
<tr>
<td><strong>Measures</strong></td>
<td>Pre, Post, 6 months Standardized, observational, parent report</td>
</tr>
<tr>
<td><strong>Participants</strong></td>
<td>61 children with ASD Average age: 6 years, 6 months Average Leiter: 68.16 Gender: 74% male PPVT: 32 Mean words at pre: 16.6</td>
</tr>
</tbody>
</table>
Intervention Variations

- **J-EMT Spoken Language Only**
- **J-EMT + SGD**
  - Speech Generating Device - Dynavox or iPad
  - Model using spoken language and SGD
    - At least 50% of utterances, 70% of expansions
  - Child could speak or use SGD to respond and communicate
Use of SGD

- SGD available to the child
- Programmed pages for toys sets
- Used communicatively with the child
  - 50% of adult utterance
  - 70% of adult expansions
- Child could respond to prompts with either SGD or spoken language
- Embedded in JASPER-EMT interactions
Results

• 70% of whole group met criterion for response to treatment at week 12
• Greater percentage of participants in the JASP + EMT+ SGD group (77%) were early treatment responders than in the JASP +SGD group (62%)

• Participants in the JASP + EMT +SGD group had:
  • more Social Communicative Utterances (SCU),
  • greater Number of Different Word Roots (NDW),
  • more comments (COM) than participants in JASP+ EMT group

• Both groups shows gains over time in SCU and NDW; only the JASP+EMT+SGD group showed gains in COM
# Results At 12 Weeks

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>12 weeks</th>
<th>Treatment Responders</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TSCU</td>
<td>TNDW</td>
<td>TCOM</td>
</tr>
<tr>
<td><strong>JASP+ EMT</strong></td>
<td>28.4</td>
<td>16.8</td>
<td>7.0</td>
</tr>
<tr>
<td><strong>JASP + EMT + SGD</strong></td>
<td>30.5</td>
<td>17.6</td>
<td>5.1</td>
</tr>
<tr>
<td>(difference)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Effect Size</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>P value</strong></td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
</tr>
</tbody>
</table>

Social communicative utterances (TSCU), Number of different word roots (TNDW) and number of comments (TCOM) were derived from a naturalistic language sample with a blinded clinician.
Total Social Communication and Initiated Joint Attention Pre, Mid, Post and 12 week Follow-up

Ongoing Studies

- **ACE: Minimally Verbal Children with Autism**
  - 192 5-8 year old children with ASD
  - Fewer than 20 words
  - RCT SMART design
    - Discrete Trial Training (DTT)
    - JASPER-EMT
  - Adaptive treatment
    - Both DTT and JASPER-EMT with iPads
    - Slow responders in both conditions randomized to either receive tailored combination of DTT +JASPER- EMT or continue
    - Treatment responders in both conditions randomized to either receive parent training or continue

Ongoing Studies

Minimally Verbal Preschoolers with Autism

- 120 3-4 year old children with ASD
- Fewer than 20 words
- RCT Treatment vs. Control
- JASPER-EMT with DTT pre-teaching core skills
  - Individualized based on baseline imitation and receptive skills
  - Up to 24 20-minute DTT sessions in clinic
- With iPads
- Parent training
  - Clinic (play) and home (play + routines)

EFFECTS OF NATURALISTIC SIGN INTERVENTION ON EXPRESSIVE LANGUAGE OF TODDLERS WITH DOWN SYNDROME.

# Children with Down Syndrome

<table>
<thead>
<tr>
<th>Communication Challenges</th>
<th>Adaptations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low rate of symbol infused joint attention</td>
<td>Model communication in joint engagement episodes</td>
</tr>
<tr>
<td>Poor articulation skills</td>
<td>Teach sign + word as mode</td>
</tr>
<tr>
<td>Poor auditory memory/ strong visual skills</td>
<td>Model words + sign</td>
</tr>
<tr>
<td>Poor generalization across partners, settings</td>
<td>Teach with multiple partners, settings, activities</td>
</tr>
</tbody>
</table>
# Children with Down Syndrome

<table>
<thead>
<tr>
<th>Study Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Design</strong></td>
<td>Multiple Baseline Single Subject</td>
</tr>
</tbody>
</table>
| **Intervention**| EMT Words + Signs  
24 sessions at home  
Therapist + Parent |
| **Measures**    | Pre, Post, ever 3 months  
Standardized, observational, parent report  
Use of signs |
| **Participants**| Gender: 1 male, 2 female  
Average age: 25 months (2.83)  
Average Mullen: 69 (8.04)  
Average PLS-Total Standard Score: 67.25 (5.32) |
Intervention Variation

- EMT Words + Signs
- Simplify and reduce prompting
- Parent training after responding to prompts was established with therapist
EMT Words + Signs for Young Children with Down Syndrome

- 3 Toddlers with DS 18-22 months
- Multiple baseline design
- Phase 1:
  - Taught by SLP in the clinic setting
  - Generalization to home activities with parents
- Phase 2:
  - Parent training


<table>
<thead>
<tr>
<th>Parent Outcomes</th>
<th>Child Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Matched Turns</td>
<td>% Target JA models</td>
</tr>
<tr>
<td>% Targets</td>
<td>% Expansions</td>
</tr>
<tr>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td>Ryan</td>
<td>41%</td>
</tr>
<tr>
<td>Erin</td>
<td>36%</td>
</tr>
<tr>
<td>Jay</td>
<td>34%</td>
</tr>
<tr>
<td>18.5</td>
<td>30.5</td>
</tr>
</tbody>
</table>
Ongoing Studies

J-EMT  Words + iPads
- 3-4.5 year olds with DS
- Parent + Therapist
- JASPER-EMT
- 48 sessions; 4 days/week
- Childcare/preschool + Home
- iPads
- RCT treatment vs. control

EFFECTS OF EMT+PE ON THE LANGUAGE SKILLS OF YOUNG CHILDREN WITH CLEFT PALATE

Kaiser, Scherer, Frey & Roberts (submitted)

NIDCD 1R21DC009654
## Children with Repaired Cleft

<table>
<thead>
<tr>
<th>Communication Challenges</th>
<th>Adaptations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low intelligibility</td>
<td>Recast unintelligible utterances, model phonological targets</td>
</tr>
<tr>
<td>Low rate of communication</td>
<td>Use responsiveness strategies to increase rate of communicating</td>
</tr>
<tr>
<td>Often shy, nonresponsive to prompting</td>
<td>Increase prompting after 12-24 sessions</td>
</tr>
</tbody>
</table>
# Children with Repaired Cleft

<table>
<thead>
<tr>
<th>Study Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Design</strong></td>
<td>Pilot Randomized Clinical Trial 13 Intervention, 9 Control</td>
</tr>
<tr>
<td><strong>Intervention</strong></td>
<td>PE-EMT 48 sessions in the clinic Therapist only</td>
</tr>
<tr>
<td><strong>Measures</strong></td>
<td>Pre, Mid, Post, 3 months, 6 months Standardized, observational, parent report</td>
</tr>
<tr>
<td><strong>Participants</strong></td>
<td>Average age: 25 months Average Bayley Cognitive Score: 101 Gender: 69% male</td>
</tr>
<tr>
<td></td>
<td>PLS-4: 100 Scherer &amp; Kaiser, 2010 NIDCD 1R21DC009654-01A1</td>
</tr>
</tbody>
</table>
Intervention Variation

- Phonological Emphasis PE-EMT
- Choose word targets with target sounds
- EMT for words with embedded target sounds
- Recast for phonological correctness
- Simplify prompt sequence
Children with Repaired Cleft

Number of Different Words

<table>
<thead>
<tr>
<th>Time</th>
<th>Intervention</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>T0</td>
<td>17</td>
<td>25</td>
</tr>
<tr>
<td>T1</td>
<td>34</td>
<td>52</td>
</tr>
<tr>
<td>T2</td>
<td>50</td>
<td>58</td>
</tr>
</tbody>
</table>

ES: d = .72  

p = .02
Children with Repaired Cleft

Percentage of Consonants Correct

- T0: Intervention 52%, Control 34%
- T1: Intervention 57%, Control 58%
- T2: Intervention 71%, Control 78%
Ongoing Studies

• EMT for Children with Autism in South Africa
  • Single Case Research Design
    • Multiple baseline design across participants
  • Four children with ASD and minimal spoken language, ages 6-8
  • EMT Intervention
    • Therapist implemented
    • One on one in play sessions
    • Incorporates JASPER principles to teach play and joint attention skills
    • About 20 sessions, 30 minutes each, 3 times per week
  • Distance coaching with performance feedback for therapist
  • Preliminary results
    • Clear effects after 3-8 sessions, with improving trends
    • Changes in number of different words and total spontaneous communication

Summary

• Adaptations to EMT
  • + Parents as therapists
  • + Add procedures to teach joint attention, symbolic play (JASPER)
  • + Add Discrete Trial Training to teach prerequisites
  • + Add Mode – SGD or Sign
  • + Add phonological targets and recasting

• Adaptations within EMT
  • + Individualize targets
  • + Adjust dosage
  • + Emphasize positive behavior support strategies
  • - Reduce or simplify prompting
  • + Adapt parent training to cultural and linguistic context
    • Train in home language
    • Teach parents EMT to support home language
    • Adjust linguistic targets to reflect typical development in home language
Tools for Practice
Implementation Fidelity and Dosage Matter

• Is the intervention being delivered at fidelity?
• Is the dosage of components within in the intervention sessions sufficient?
  • Models, expansions, prompts
  • Is child responding to the active ingredients?
• Are sessions frequent enough, long enough?
• Do other partners need to be trained to increase dosage?
• Is partner training being delivered with fidelity? Is there evidence of partner fidelity in implementing EMT?

<table>
<thead>
<tr>
<th>Fidelity Measure</th>
<th>% Criterion</th>
<th>% Intervention Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matched turns</td>
<td>&gt;75</td>
<td>98 (2.8)</td>
</tr>
<tr>
<td>Talk at child’s level</td>
<td>&gt;50</td>
<td>83 (12.5)</td>
</tr>
<tr>
<td>Recasted Incorrect child utterances</td>
<td>&gt;40</td>
<td>76 (16.7)</td>
</tr>
<tr>
<td>Expanded child utterances</td>
<td>&gt;40</td>
<td>55 (16.0)</td>
</tr>
<tr>
<td>Time delay strategies</td>
<td>&gt;80</td>
<td>98 (8.0)</td>
</tr>
<tr>
<td>Prompting strategies</td>
<td>&gt;80</td>
<td>98 (12.4)</td>
</tr>
<tr>
<td>Words containing speech targets</td>
<td>&gt;25%</td>
<td>34 (17.3)</td>
</tr>
</tbody>
</table>
Tools for Practice
Skills Needed for Effective Intervention

• Fluent in the use of EMT*
• Skills for training parents and partners
• Skilled in the additional components added to EMT
  • JASPER http://www.interactingwithautism.com/section/treating/jasper
  • Sign
• Speech generating device: use, management, assessment, instruction
• Speech recasting (Camarata et al., 2009)
• Discrete trial training (Smith, 2010)

* Information available at http://kc.vanderbilt.edu/KidTalk/
Tools for Practice Assessment & Progress Monitoring

• Structured Play Assessment *
• Language Sample*
  • Transcribed
  • Coded for gesture
  • Words, MLU, rate of initiations, rate of communication, consonant production
• Speech assessments
  • Arizona, PEEPS or language sample with consonants transcribed
• Baseline EMT session*
  • Responsiveness to comments, TD, Prompts;
  • Prompted and spontaneous verbal imitation
  • Use of targets
• Imitation probe *
• Receptive language probe : receptive object and picture labeling
• Toy preference assessment (ongoing)

* Information available at http://kc.vanderbilt.edu/KidTalk/
Tools for Practice

Progress Monitoring is Essential

• Every child presents unique challenges in implementing EMT
• How child is responding to the intervention is the best test of whether the fit is right
  
  Choose the best treatment based on assessment, baseline
  Monitor progress against benchmarks
  If needed, make adaptations to include other evidence based treatments

• Quick tools for monitoring:
  • IGDI http://www.igdi.ku.edu/
  • Trackers for session data for therapist and child *
Last words

- EMT is evolving with new individualized adaptations
- The core of the intervention is always the social communicative connection between the child and partner
- The most important immediate outcome is increased communication
- Fine tuning intervention to fit child characteristics can improve outcomes when combined with the core EMT and components are delivered at fidelity
References


Appreciation!

- KidTalk Research Team at Vanderbilt
- Families and children who participated in our studies
- Our collaborators
  - Connie Kasari (UCLA)
  - Danny Almirall (Univ of Michigan),
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