

# COMMUNICATION MODALITIES

AND ABA



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## ABOUT YOUR PRESENTER



JEMMA GOSS, M.S., CCC-SLP

SPEECH TRAINING COORDINATOR

- **Education:**
  - BS in Communication Sciences and Disorders (OU)
  - M.Ed. Special Education-Autism (NCU)
- **Certification:**
  - BCBA (Board Certified Behavior Analyst)
  - SLP-Assistant (Speech Language Pathologist Assistant)
- **Experience:**
  - Over a decade of experience helping kiddos reach their potential through treatment.
    - Center Based ABA programs 2002-2004
    - In-Home/School ABA programs and speech programs 2004-2010
    - Training Coordinator 2010-2014
    - Program Supervisor 2014-2015 (Therapy and Beyond Dallas and Oklahoma)
    - Clinical Director 2015-2017 (Therapy and Beyond DFW: FW and Carrollton)
    - Treatment Operations Manager 2017-Present (Therapy and Beyond)
- **Family Life:**
  - Wife and Mom to a 3 month old baby girl



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## ABOUT YOUR PRESENTER



JEMMA GOSS, M.S., CCC-SLP

SLP AND SLP TRAINING COORDINATOR

- **Education:**
  - B.S. in Speech-Language Pathology and Audiology 2011 from UTD
  - M.S. in Communication Disorders 2012 from UTD
- **Certification:**
  - CCC-SLP
- **Experience:**
  - Worked at Wylie ISD 2012-2014 as SLP
  - Worked at Therapy and Beyond 2014-Present as SLP and SLP Training Coordinator
  - Worked home health 2015-2017 as SLP
- **Family Life:**
  - Wife of 7 years and dog mom



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## WHAT TO TAKE AWAY FROM THIS PRESENTATION

- Get a better understanding of how individuals with Autism Spectrum Disorder (ASD) benefit from Augmentative and Alternative Communication (AAC)
- Understand the differences between no-tech, low-tech, and high-tech forms of AAC
- Gain knowledge on which AAC technology to use
- Understand the potential benefits of AAC on the development of natural speech with individuals with ASD
- Gain knowledge on behavioral AAC intervention approaches for individuals with ASD



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## WHY IS AAC NEEDED?



Approximately **25%-61%** of individuals with autism present with little or no functional speech and may be candidates for AAC to replace or supplement natural speech.

Weitz, C., Dexter, M., Moore, J., Glennen, S., & Decoste, D. (1997). AAC and children with developmental disabilities. *Handbook of augmentative and alternative communication*, 395-431.

Lloyd, L. L., Fuller, D. R., & Arvidson, H. H. (1997). *Augmentative and alternative communication: A handbook of principles and practices*. Needham Heights, MA: Allyn & Bacon.



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## DEFINING AAC

THE AMERICAN SPEECH-LANGUAGE HEARING ASSOCIATION (2014) DEFINES AAC AS INCLUDING...

“...all forms of communication (other than oral speech) that are used to express thoughts, needs, wants, and ideas. We all use AAC when we make facial expressions or gestures, use symbols or pictures, or write.”

American Speech-Language-Hearing Association. (2002). *Augmentative and alternative communication: Knowledge and skills for service delivery* [Knowledge and Skills]. Available from [www.asha.org/policy](http://www.asha.org/policy)



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## HOW CAN AAC EVOLVE

WITH THE NEEDS OF EACH INDIVIDUAL?

Just as the range of behaviors and needs are varied with the diagnosis of ASD, so are the AAC options to support language and communication, regardless of level of severity on the spectrum



Georgina T.F. Lynch. (2016). AAC for Individuals with Autism Spectrum Disorder: Assessment and Establishing Treatment Goals. *Technology and the Treatment of Children with Autism Spectrum Disorder*, pg. 4.



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## FORMS OF AAC

**AAC IS TYPICALLY DIVIDED INTO TWO BOARD CATEGORIES - UNAIDED & AIDED**

### UNAIDED

forms of AAC do not require an external tool.  
Unaided forms require some degree of motor control.

### AIDED

forms of AAC require some form of external support-either electronic or nonelectronic.

American Speech-Language-Hearing Association. *Augmentative and alternative communication: AAC Systems* [Professional Issues]. Available from [https://www.asha.org/7P0?specificTopic.asp?dId=658942773&sectionKey\\_issues](https://www.asha.org/7P0?specificTopic.asp?dId=658942773&sectionKey_issues).



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## FORMS OF AAC, CONT.

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American Speech-Language-Hearing Association. *Augmentative and alternative communication: AAC Systems* [Professional Issues]. Available from [https://www.asha.org/7P0?specificTopic.asp?dId=658942773&sectionKey\\_issues](https://www.asha.org/7P0?specificTopic.asp?dId=658942773&sectionKey_issues).



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## FORMS OF AAC, CONT.

Forms of AAC		
Unaided	Aided	
No-tech	Low-/Light-Tech	High-Tech
<ul style="list-style-type: none"> <li>• Gestures</li> <li>• Manual signs</li> <li>• Facial expressions</li> <li>• Vocalizations</li> <li>• Verbalizations</li> <li>• Body language</li> </ul>	<ul style="list-style-type: none"> <li>• Pictures</li> <li>• Objects</li> <li>• Photographs</li> <li>• Writing</li> <li>• Communication boards/books</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Speech generating devices (SGD) *</b></li> <li>• Single-message devices and recordable/digitized devices</li> <li>• AAC software that enables dynamic symbol/language representation and that is used with some form of technology hardware (e.g., computers, tablet, smartphone)</li> </ul>

American Speech-Language-Hearing Association. Augmentative and alternative communication: AAC Systems [Professional Issues]. Available from [https://www.asha.org/PRPSPublicTopic.aspx?folderid=6589942773&section=Key\\_Issues](https://www.asha.org/PRPSPublicTopic.aspx?folderid=6589942773&section=Key_Issues)




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## OTHER FORMS OF LOW-TECH AAC



Eye-gaze board



Pragmatic Organisation Dynamic Display (PODD)



Core Vocabulary Exchange System




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## OTHER FORMS OF HIGH-TECH AAC



Tobii Dynavox and other dynamic display devices



AAC apps for iPad/iPhone and Android devices

- Proloquo2Go
- Touch Chat
- Sono Flex
- Lamp Words for Life
- Link to app list: [everyonecommunicates.org/methods/tech.html](http://everyonecommunicates.org/methods/tech.html)

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## FUNDAMENTAL COGNITIVE AND BEHAVIOR SKILLS TO EVALUATE

- Prior to learning oral language, typically developing children demonstrate specific skills that are conducive to further developing communicative competence and subsequent oral language which include skills related to object permanence, cause and effect, joint attention, and imitation.
- The next figure illustrates conceptual framework for considering key elements in the evaluation process that includes fundamental skills and analysis of motivation to use AAC, which can be considered during evaluation for individuals with autism.

Georgina T.F. Lynch. (2016). AAC for Individuals with Autism Spectrum Disorder: Assessment and Establishing Treatment Goals. Technology and the Treatment of Children with Autism Spectrum Disorder, pg. 13.



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## HOW DO YOU CHOOSE? TEST OF AIDED-COMMUNICATION SYMBOL PERFORMANCE (TASP) by Joan Bruno, Ph.D., CCC-SLP

- IS A SYSTEMATIC AND OBJECTIVE MECHANISM FOR ASSESSING...
  - optimal symbol and field size
  - ability to recognize the grammatical categories that symbols represent
  - categorization skills
  - ability to form sentences using the picture communication board



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## TEST OF AIDED COMMUNICATION SYMBOL PERFORMANCE, CONT.

- THIS ASSESSMENT IS USED FOR:
  - a starting point for selecting or creating sample communication arrays
  - selecting an appropriate AAC device and page set
- WHY IT HELPS:
  - ensure that all clients are assessed in consistent and comprehensive manner



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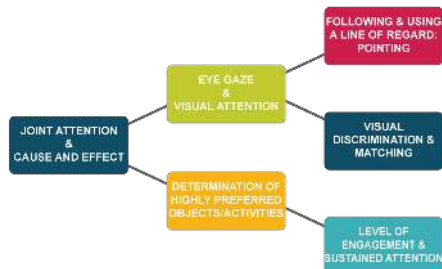
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## HOW DO YOU CHOOSE?



Georgina T.F. Lynch. (2016). AAC for Individuals with Autism Spectrum Disorder: Assessment and Establishing Treatment Goals. Technology and the Treatment of Children with Autism Spectrum Disorder, pg. 14.



## COMMUNICATION MATRIX

Communication Matrix is a tool that can be used to help measure communicative behaviors

It is criterion-referenced tool that breaks down early communication skills ranging from pre-linguistic to abstract language use in four domains (social interaction, obtain things, refuse things, and seek and share information)

It also breaks down communication in 7 stages of language development

Determining the baseline of each individual will help establish the path by which the communication system will develop



## COMMUNICATION MATRIX

Table 2.1 Summary of seven stages of communication matrix and observable behaviors

Stage / Form	Symbolic level	Function	Behaviors	PECS phase
I Pre-intentional behavior	Pre-symbolic without intent	Expresses discomfort, pain, hunger	Vocalizations facial expressions	
II Intentional behavior	Pre-symbolic with intent	Expresses interest, pain, fright, desire to seek out	Vocalizations eye gaze facial expressions	
III Unconventional communication	Pre-symbolic behaviors used to intentionally communicate and considered unconventional because socially unacceptable	These behaviors to get needs met; demonstrates an increase in those behaviors when reinforced	Crying screaming body movements such as kicking, biting, and tugging on others to get needs met	
IV Conventional communication	Conventional means are used to communicate	Uses communicative intentions and hands and body for interaction	Gesturing reaching or shaking head, looking from object to person, pointing	Phase 1 and 2
V Concrete symbols	Symbol is physically similar to what is represented; toy keycap for "key" or "ball"	Initiates communication and one-to-one correspondence with phonological/orthographic	Picture, objects given to others to express wants, needs, and ideas	Phase 3
VI Abstract symbols	Symbolic may not physically look like the object or idea it represents; e.g., stop sign for "stop" "all done"	Symbols used one at a time to express ideas	Written words, signs, traffic, line drawings	Phase 3
VII Language	Grammatical rules followed representing abstract concepts	Used in two or three symbol combination	"I want juice"; "That's go!"; may be verbal or non-verbal	Levels 4, 5, and 6

Adapted from Rowland (2004)

\*Transition to AAC most optimal at communication stage VII and Phase 4 of PECS

Rowland, C. (1996, 2004). Communication matrix. Portland, OR: Design to Learn.



## SELECTING METHODS OF SPEAKING

- Dr. Patrick McGreevy, Ph.D., P.A and Associates created Essential for Living (EFL) Assessment
  - In Chapter 6 of EFL's is Selecting a Method of Speaking which is a systematic set of procedures to help select alternative methods of speaking depending on the learner's sensory, skill, and behavioral repertoire
  - AMS Comparison Tool is a selection diagram that helps quickly determine candidates for alternative method of speaking for each learner
  - [www.essentialforliving.com/workshops-online-trainings/alternative-methods-of-speaking/](http://www.essentialforliving.com/workshops-online-trainings/alternative-methods-of-speaking/)




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## TEACHING LANGUAGE THROUGH AAC

- In order to build a language repertoire in non-verbal children and adults with moderate-to-severe developmental or intellectual disabilities and limited or no use of alternative method of speaking
- Establish requests that contain generalized and specific content words (this follows early language development (Brown, 1973))

generalized content words	eat	drink	go	play
specific content words	cookie	juice	car	ball

Brown, R. (1973). A first language: The early stages. London: George Allen & Unwin.  
 McGreevy, P., Fry, T., Martin, C., (2017). Requests before Names and Specific Content Words before Core. Essential For Living Companion Teaching Manual III.




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## TEACHING LANGUAGE THROUGH AAC, CONT.

- Once basic requests have been established, expand the communication repertoire (increasing variability and frequency to at least 50 content words)
- After there is a foundation of concrete language (up to 400 words) can grammatical function words and/or content words be more applicable

content (fringe) words	more	go	some	help	eat	drink	play
[grammatical] function words	that	no	yes	my	the	want	mine
	I	a	it	you	what	on	here
	in	out	off	want	get	your	is




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## AAC WITH ABA

### APPLIED BEHAVIOR ANALYSIS

“The **science** in which procedures derived from the **principles of behavior** are systematically applied to improve **socially significant** behavior to a meaningful degree and to demonstrate experimentally that the procedures employed were responsible for the improvement in behavior. (p. 14)”

Cooper, J. O., Heron, T. E., & Heward, W. L. (2007). *Applied Behavior Analysis*, 2nd ed. Upper Saddle River, N.J.: Pearson Prentice Hall.



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## AAC WITH ABA

Some individuals may rely on socially inappropriate, or maladaptive behaviors (i.e. hitting) to communicate their needs to others. In these cases, **AAC** can serve as an **alternative** method of communication through **functional communication training**.

Danov, S.E., Hartmann, E., McComas, J.J., & Symons, F.J. (2010). Evaluation of two communicative response modalities for a child with autism and self-injury. *The Journal of Speech and Language Pathology- Applied Behavior Analysis*, 5(1), 70-79.

Wacker D. P, Berg W. K, Harding J. W, Derby K. M, Aarnus J. M, & Healy A. (1998). Evaluation and long-term treatment of aberrant behavior displayed by young children with disabilities. *Developmental and Behavioral Pediatrics*, 19, 260-266.



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## FUNCTIONAL COMMUNICATION TRAINING

A differential reinforcement procedure in which an individual is taught an **alternative response** that results in the same class of reinforcement identified as maintaining problem behavior.

Carr, E.G. & Durand, V. (1985). Reducing behavior problems through functional communication training. *Journal of Applied Behavior Analysis*, 18, 111-126.



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## CAN AAC BENEFIT NATURAL SPEECH PRODUCTION?

According to Mirenda (2003), if AAC (e.g., the manual sign or graphic symbol for cookie) is presented along with the spoken word (as is typically the case in AAC intervention), and these are followed by a reinforcer (e.g., a chocolate chip cookie), **both the AAC mode and speech production should increase in frequency.**

Mirenda, P. (2003). Toward functional augmentative and alternative communication for students with autism: Manual signs, graphic symbols, and voice output communication aids. *Language, Speech, and Hearing Services in Schools*, 34, 203-216



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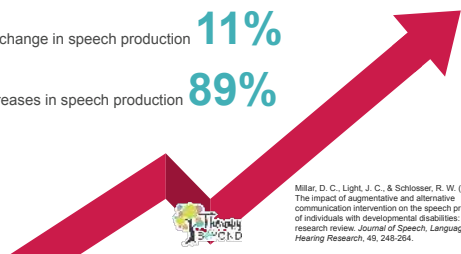
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## SPEECH PRODUCTION, CONT.

According to the study by Millar, D., et. al, (2006) investigating speech production before, during, and after AAC intervention, participants with:

- Decreases in speech production **0%**
- No change in speech production **11%**
- Increases in speech production **89%**



Millar, D. C., Light, J. C., & Schlosser, R. W. (2006). The impact of augmentative and alternative communication intervention on the speech production of individuals with developmental disabilities: A research review. *Journal of Speech, Language, and Hearing Research*, 49, 248-264.

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## QUESTIONS?



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