

# CIGNA Autism Education Series

## Developing Early Communication Skills in Toddlers & Young Children with Autism Spectrum Disorder (ASD) and Limited Language

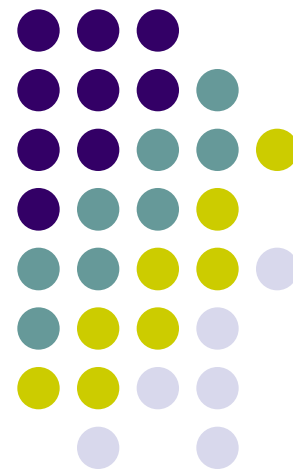
July 14, 2011

**Moira Lewis, M.S. CCC-SLP**

Speech & Language Pathologist

YAI Autism Center

New York, NY



# Important to Consider



- SPEECH versus
  - LANGUAGE versus
    - **COMMUNICATION**
- Let's talk about all 3!



# Important to Remember



- Although toddlers & young children may not be speaking- they can still demonstrate a variety of communicative and social skills
- Choosing an appropriate intervention method can be linked to the child's skills, needs and interests
- Important to target the 'whole picture' of the child's communication skills



# Assessing Young Children with Autism: What to consider



- Frequency
- Functions
  - What is your child communicating for? Requests? Social interaction?
- Means
  - How is your child communicating? Gestures/speech/babbles
- Reciprocity: responsiveness to others
- Self-regulation: attention, emotional stability, reactions to sensory stimuli

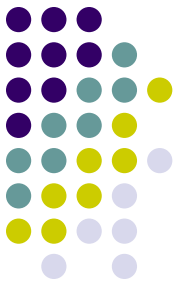


# The Role of Language Development in young children with ASD



- Communication and language difficulties are core features of the ASD diagnosis
- Increasing a child's expressive language can aid in increasing a child's socialization & play with others
- Until recently, 50% of children with ASD did not develop spoken language (Tager-Flusberg et al., 2005).
- Multiple language intervention approaches designed for young children with ASD currently exist and are under development/research
- Achievement of spoken language by age 6, along with IQ, is the strongest predictor of good outcome (e.g., Howlin, 2005).





# Consider all areas of communication:

In addition to deficits of speech, young children with ASD show:

- Little use of conventional gestures (i.e. waving),
- Difficulties with motor and vocal imitation,
- Reduced attention to others' faces and voices,
- Reduced integration of eye gaze, gestures, and speech,
- Difficulty in sharing focus with others (joint attention).

(Summarized in Chawarska & Volkmar, 2005)



# Preparing for Success



What are the **pivotal skills** for speech development?

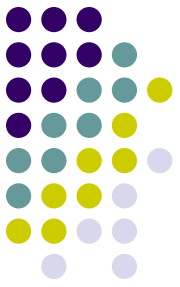
Joint Attention

Imitation

Symbolic Play



# Joint Attention



Definition: (From Inge-Marie Eigsti)

**Joint Attention** is the process of **sharing** one's experience of observing an object or event, by using & following gaze or pointing gestures. It is critical for social development, language acquisition & cognitive development...

In other words: Joint attention is a child's way of pointing something out for the purpose of sharing.

- This is NOT requesting, and is purely a social behavior.





# Joint Attention



- Joint attention predicts later language and response to language treatment in ASD (e.g., Mundy et al., 1990; Paul et al., 2008; Watt et al., 2007)
- Single case reports suggest teaching joint attention supports the development of vocabulary (Siller & Sigman, 2002)
- Parent-implemented joint attention instruction resulted in marginal language improvements (Drew et al., 2002)
- Children taught JA improved, but gains weren't maintained (Whalen & Shreibman, 2003); some improvement in speech seen (Whalen & Ingersoll, 2006).
- Kasari et al., 2007 randomized controlled trial
  - Study examined joint attention instruction vs. play therapy
  - Supporting joint attention resulted in the child increasing his ability to show
  - No report of increase in language



# Symbolic Play



- Communication goals should focus on play, in addition to communication
- Important to incorporate play into both therapy goals and home setting
- The use of symbols in pretend play and the understanding of words as symbols is a key component of communication



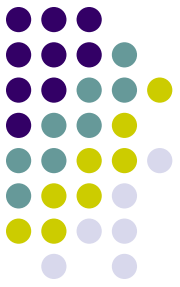


# Why is Play so important to target?

- Helps a child to learn about the people and objects around him
- Pretend play is especially important at early stages of language development because both pretend and language are forms of symbolic functioning:
  - using an object or a word to stand for an idea.



# Play & Language Development



- Pretend play and language develop in tandem, and children with ASD frequently have difficulty in this area.
- Play, with motivating objects, can be an enticing way to both capture attention and build language
- For children with deficits in both pretend play and language, developing symbolic play will often be one of the goals of intervention.



# Symbolic Play



A child's level of symbolic play skills predicts:

- Later social relatedness (Sigman & Ruskin, 1999) as well as: response to language treatment (Yoder & Stone, 2006)
- Kasari et al., 2007: Play behaviors taught by:
  - Discrete trial imitation
  - Physical guidance
  - Modeling and practice in
    - using objects representationally,
    - Referring to objects out of sight
    - Attributing properties to objects (hot!)
  - Symbolic play behaviors increased
  - No evidence of language improvement



# Imitation



- Consider both **motor imitation** and **vocal imitation**
- Important skill to both promote attention to others, and language and sound development

Research is abundant:

- Level of imitation is associated with language level (Stone & Yoder, 2001)
- Several studies (Ingersoll, Lewis, & Kroman, 2007; Ingersoll & Gergans, 2007; Whelan, Schreibman, & Ingersoll, 2006) showed naturalistic imitation training increased spontaneous imitation
- Improving and developing imitation skills can lead to increases in a child's language, and joint attention.



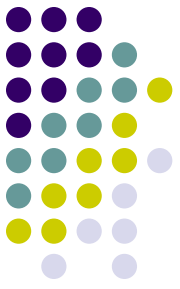
# Summary:

# Pivotal Skills



- These skills can be considered ‘foundational’ for language development
- Appear to be teachable in young children with ASD.
- Research provides some suggestion of generalization and maintenance of skills.
- Working on these pivotal skills does appear to result in some gains in other prerequisite communication areas.
- Some reports of spontaneous increases in the use of speech following these interventions.





# What else do we know about increasing language and communication in ASD?

Parents and caregivers can play an important role in helping your child be a responder

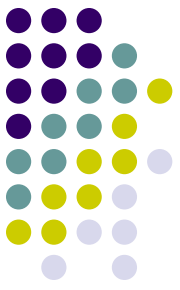
- You can generate ‘responsivity’
- In other words, improving back and forth behavior

Abundant area of new research:

- Parent responsivity is related to language development in children with ASD (Siller & Sigman, 2008)
- Parent responsivity is related to outcomes in language intervention in children with ASD (Yoder & Stone, 2006)
- Parents can be trained to increase responsivity (McConachie et al., 2005)







# What other programs have been associated with induction of speech in preverbal children?

- Picture Exchange Communication System (PECS)
- Behavioral Programs: Discrete Trial Instruction (DTI)
- Prelinguistic Milieu Teaching (PMT)



# Picture Exchange Communication System PECS (Bondy & Frost, 2001)



- Exchange of a picture for requesting a reinforcing item
- **Child is shown "highly preferred" item,**
  - picks up picture of the item,
  - reaches toward the communicative partner,
  - releases the picture into the 'trainer's' hand.
  - Physical prompting provided by second adult in Phase I.
- Incorporates principles of applied behavior analysis
  - Highly structured, direct teaching strategies
  - Reinforcement strategies with motivating items
  - Error correction strategies with cues
  - Generalization strategies with fading and expansion



# PECS Research



- Several studies (e.g., Charlop-Christy et al., 2002; Ganz & Simpson, 2004) show children with ASD taught PECS increase communication and speech,
  - but Magiati & Howlin (2003) found that speech was much less likely to improve
- Kai-Chien, 2008 meta-analysis of PECS research:  
PECS used as a communication tool across studies
  - increased overall level of communication (62% of studies);
  - increased spontaneous language/speech/imitation (46% of studies);
  - increased initiations of communication (31% of studies);
  - studies that included a follow-up assessment indicated maintenance.





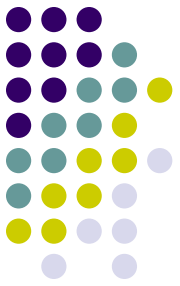
# Discrete Trial Instruction

- Also known as a highly structured form teaching, focusing on repeated, single trials to elicit new skills
- Uses prompting, reinforcement, and intervals to teach
- Lovaas treated preschoolers with discrete trial training 40 hrs./week between 1970 and 1984.
- Sheinkopf & Siegel showed similar results obtained with 20 **and** 40 hours/week.
- Research by Smith (2001), Smith et al. (2007), Partington & Sundberg (1998) supports findings.
- Reichow & Wolery meta-analysis (2008) found general support for effectiveness of DTI treatment for speech in young children with ASD.
- Disadvantages of DTI approaches generally include generalization and maintenance as this approach does not incorporate naturalistic teaching



# Rapid Motor Imitation Training

(Tsouri & Greer, 2003)



- Based on concept of Behavioral Momentum
  - Child *imitates* rapid motor imitation sequences of actions the child can already do, then a simple word for a preferred item is added to the end of the sequence to be used as a request.
  - Using fast motor imitation to generate a verbal imitation of an item the child can see
  - Child is given tools and cue to **request**
- Later, a new word for a nonpreferred item is prompted as a **label**, and a preferred item is given as a reward.
- Results of case series show both spoken requests and labels produced without prompts following RMIA.



# Prelinguistic Milieu Teaching

(Yoder & Warren, 2001)



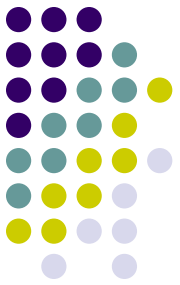
**This treatment method incorporates following a child's interests, and building routines**

**Using toys, objects and routines to attract the child to communicate**

- Techniques:
  - Motivating items are in sight but out of reach.
  - Creating a communication temptation
  - Expectant waiting, focusing on objects of child interests.
- Associated with increased ability to initiate communication
- increases in the frequency, spontaneity and elaboration of language.
- Some nonverbal children have developed speech w/ PMT (Yoder & Stone, 2006).
  - This method is the current focus of a number of intervention studies



# PMT Research



- Yoder (2002, 2006) Randomized controlled trials showed PMT is more effective than PECS for children who communicated frequently at start of study, and had low play skills.
- Keen et al., 2007 studied effects of a PMT-like intervention on 16 children, 2-4 years, with autism.
  - Standardized measures of communication and symbolic behavior conducted by independent observers pre- and post-treatment
  - Changes in some communication and symbolic behaviors occurred, by parent report.
  - BUT improvements rated by independent observers were not significant.



# What can we conclude?

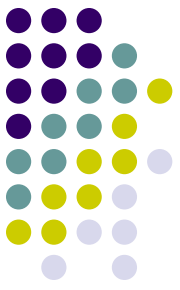


- Pivotal skills can be taught; are associated with increases in spoken language:
  - Joint attention,
  - Motor/vocal imitation,
  - Play
- Parent responsivity can be taught; increases language and response to language intervention.
- DTI programs have been shown to be effective in eliciting first spoken words from preverbal children.
- Other programs have been associated with some reports of spontaneous increases in spoken language:  
(PMT, PECS)

Research continues to be done







# What does this suggest to parents & providers?

- Address acquisition of spoken language
- Address whole communication: initiating/responding/play
- Use evidence-based treatments, which include:
  - DTI
  - PMT
  - PECS
- Use treatments that incorporate the development of pivotal skills for spoken language, which include:
  - Joint attention
  - Play
  - Imitation
- Generalization: Increasing parent responsiveness may increase impact of clinician-delivered intervention



# Some Guiding Principles for Communication Programming



- **Treat behavior as if it were communicative**
- Use unconventional behaviors as a starting point for communication
- Teach language that expresses what the child is already trying to get across with other means
- Match child where s/he is; accept any communicative behavior; then up the ante



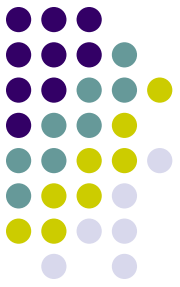
# Intervention for Social-Communicative Deficits in Young Children: Pre-intentional Phase



- **“Learning to learn” behaviors: Sit, Look, Listen, Do**
- Increase frequency of communication w/ prompt-free elicitations
- Increase frequency of communication w/ communicative temptations
- Increase repertoire of social interaction and play routines
- Increase use of conventional gestures and speech-like vocalizations
- Increase receptive language through focused stimulation



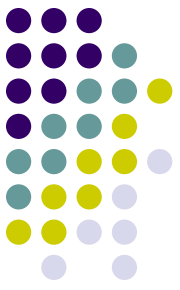
# Functions of Communication



## 3 basic functions of communication :

- **regulatory functions**, used to get others to do or not do things;
- **social interaction functions**, used to greet, call attention to oneself or one's actions or to 'show off'
- **joint attention functions**, used to direct an adult's attention to objects or events for the purpose of sharing focus.





# Functions leading to Social Language

- Social interaction and joint attention functions are particularly important in the development of conversation

## Why?

- Because they lay the basis for the ability to share focus on a topic and to take turns.



# Intervention for Social-Communicative Deficits in Young Children: Pre-linguistic Phase



- Increase range of communicative acts; encourage joint attention and social interaction
- Increase initiation of communication through temptations and following the child's lead
- Increase level of symbolic play through modeling
- Consider structured teaching strategies:
  - Verbal behavior/ABA approaches/discrete trial
  - Picture Exchange Communication System
  - Sign as adjunctive modality
- Continue to increase receptive language through Focused Stimulation; sharing repeated focus



# Intervention for Social-Communicative Deficits in Young Children: Emerging Language Phase



- Address generalization/functional use of language with **incidental teaching**:
  - An ABA based ‘natural teaching’ techniques based on interactions between a parent and child taking place in a natural situation.
  - It is a child-led technique, as any sign a child is interested in something is taken as an opportunity to engage and teach.
- Use color-coded word and sentence forms to increase length of response in PECS format
- If a child echoes, aim to shape echolalia into functional language
- Increase receptive and expressive language through **focused stimulation**:
  - Sharing repeated focus on a particular word, activity or objects, while targeting related language, and doing so repeatedly while interacting with the child throughout the day.



# Intervention for Social-Communicative Deficits in Young Children: Across Language Levels



- **Develop Reciprocity**

- Require gaze pairing with communicative acts
- Reward visual and auditory attention to others
- Use turn-taking games that are engaging; pair with verbal structure
- Use imitation games

- **Develop self-regulation through communication:**

- Provide self-talk and self-comfort strategies for emotional regulation
- Functional analysis of maladaptive behavior, self-stimulatory behaviors, and sensory sensitivities
- Replace with communicative strategies





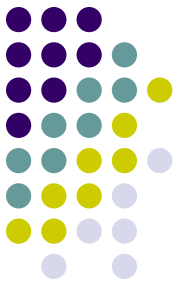
# Some Guiding Principles for Communication Programming



- Link 'here and now' language to objects and events
- Provide language for what is on the child's mind
- Utilize the child's preferred strategies and modalities
- **Teach both initiation and response**
- Provide concentrated, repeated examples of language patterns
- Teach language in both structured and naturalistic contexts
- Teach language within play, incorporating the things your child finds motivating and fun
- Make language and communicating reinforcing in and of itself



# Resources for Parents & Professionals



Apel, K. (2001). Beyond Baby Talk: From Sounds to Sentences- A Parent's Complete Guide to Language Development. New York: Three Rivers Press.

Bondy, A. & Frost, L. (2002). A Picture's Worth: PECS and Other Communication Strategies in Autism. Bethesda, MD: Woodbine House.

Hodgdon, L (2004, 1995). Visual Strategies for Improving Communication: Practical Supports for School and Home. Troy, Michigan: QuirkRoberts Publishing.

Pepper, J. & Weitzman, E. (2004). It Takes Two to Talk. Toronto, Ontario: The Hanen Centre. [www.Hanen.org](http://www.Hanen.org)

Quill, K. (2000). Do Watch Listen Say: Social and Communication Intervention for Children with Autism. Baltimore, MD: Paul H. Brookes Publishing Co.

Sussman, F. (1999). More than words; Helping parents promote communication and social skills in children with autism spectrum disorder. Toronto, Ontario: The Hanen Centre. Ph. # (416) 921-1073; Internet: [www.hanen.org](http://www.hanen.org)



# Questions?

- [moira.lewis@gmail.com](mailto:moira.lewis@gmail.com)

