CIGNA Autism Education Series

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

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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
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 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
● 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.
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
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
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
- Sheinkopf & Siegel showed similar results obtained with 20 and 40 hours/week.
- 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


Questions?

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