THE EARLIEST INDICATORS OF AUTISM SPECTRUM DISORDERS:

FROM IDENTIFICATION TO EARLY INTERVENTION

Amy M. Wetherby, Ph.D.
&
Juliann Woods, Ph.D.

Florida State University

Presented at ASHA 2001 Conference

DSM IV Diagnostic Criteria for Autistic Disorder

- Impairment in Social Interaction
- Impairment in Communication
- Restricted Repertoire of Activity and Interests

Impairment in Social Interaction

- *Impairment in the use of nonverbal behavior*
- *Lack of spontaneous sharing*
- *Lack of social/emotional reciprocity*
- *Failure to develop peer relationships*

Impairment in Communication

- *Delay in or lack of development of spoken language & gestures*
- *Impairment in the ability to initiate or maintain conversation*
- *Repetitive and idiosyncratic use of language*
- *Lack of pretend play*

Restricted Repertoire of Activity and Interests

- *Preoccupation with restricted patterns of interest*
- *Inflexible adherence to routines*
- *Repetitive movements*
- *Preoccupation with parts of objects*

DSM-IV Diagnostic Criteria for Pervasive Developmental Disorder

- Autistic Disorder
- PDD- Not Otherwise Specified
- Asperger's Disorder
- Rett's Disorder
- Childhood Disintegrative Disorder

Core Communication Deficits In Young Children with Autism

- CAPACITY FOR JOINT ATTENTION
  - Orienting to social stimuli
  - Shifting attention between people & objects
  - Sharing positive affect
  - Following gaze/point of another person
  - Drawing another's attention to objects and events for the purpose of sharing

Core Communication Deficits In Young Children with Autism

- CAPACITY FOR SYMBOL USE
  - Using conventional & symbolic gestures
  - Using communicative vocalizations
  - Using and understanding conventional meanings of words
  - Using objects functionally & in symbolic play

Accuracy of Specific Language Impairment Diagnosis at Age 2

- About half of children identified as late talkers at age 2 received a diagnosis of specific language impairment at age 3
- Children delayed in expressive language only were very likely to catch up on their own
- Children also delayed in receptive language, gestures, sounds, and play were more likely to have persisting language problems

(Paul, 1991; Rescorla, 1991; Thal, Tobias, & Morrison, 1991)

Accuracy of Autism Spectrum Diagnosis at Age 2

Diagnosis of Autistic Disorder (AD)

- 94% of children diagnosed at age 2 remained on the autism spectrum at age 3; 6% moved off the spectrum
- Of the 94%, 3/4 retained the diagnosis of AD at age 3 and 1/4 moved to PDD-NOS

Diagnosis of Atypical Autism (PDD-NOS)

- 74% of children diagnosed at age 2 remained on the autism spectrum at age 3; 26% moved off the spectrum
- Of the 74%, 2/3 retained the diagnosis of PDD-NOS at age 3, 1/3 moved to AD

(Lord, Pickles, DiLavore, & Shulman, 1996; Lord & Risi, 2000)

Clinical Features of Autism Spectrum in Young Children

- *Social Impairments* were prominent at 24 months
- *Communication Impairments* were prominent at 24 months
- *Restricted Repertoire of Activities and Interests* were not prominent until 36 months

(Lord, 1995; Stone, Lee, Ashford, Brissie, Hepburn, Coonrod, & Weiss, 1999)

Features that Do and Do Not Differentiate ASD and DD under 36 Months of Age

Schaffer, Cobb, Vick, & Stone, 2001

DO	DO NOT
Fleeting eye gaze	Difficulty separating
Plays with small # of toys	Limited play schemes
Object attachment	Self stimulatory behaviors
Inconsistent response to speech	Difficulty with structure
Use of nonspeech sounds	Difficulty with transitions
Lack of point	Rigidity in routines
Unconventional communication	Repetition of video/tv
Low gesture use	Echolalia
	Frequent use of rote speech

Markers Based on CHAT at 18 months

- Proto-declarative pointing
- Gaze-monitoring
- Pretend play

38 of 16,235 failed these 3 key items (10 diagnosed PDD)

369 of 16,235 failed 2 of 3 key items (22 diagnosed PDD, 37 DD, and 310 typical)

35% SENSITIVITY 98% SPECIFICITY

Features Distinguishing Autism Based on Home Videotapes at 12 months

- Pointing
- Showing
- Looking at Others
- Orienting to Name

Only the latter two distinguished children with autism from children with developmental delays.

(Osterling & Dawson, 1994; 1999)

Practice Parameters for Screening and Diagnosis of Autism Spectrum

Absolute Indications for Immediate Further Evaluation:

- No babbling by 12 months
- No gesturing (pointing, waving bye-bye) by 12 months
- No single words by 16 months
- No 2-word spontaneous (not just echolalic) phrases by 24 months
- ANY loss of ANY language or social skills at ANY age

.....

Child Neurology Society and American Academy of Neurology
(Filipek, Accardo, Baranek, et al., 1999)

CSBS Developmental Profile

- Emotion and Use of Eye Gaze
- Use of Communication
- Use of Gestures
- Use of Sounds
- Use of Words
- Understanding of Words
- Use of Objects

Comprehensive Programs

- Curriculum addresses all areas of concern
- Focus on communication and social interaction
- Intervention linked to assessment
- Family collaboration
- Systematic teaching of functional skills
- Team coordination
- Ongoing evaluation for child and family outcomes

(*Dawson & Osterling, 1997*)

What We Know….What We Need to Know:

(National Research Council, 2001: www.nap.edu)

- Intensity matters
  - What range is best for very young children?
- Early is better
  - How soon can we intervene and with what approach?
- Family participation is essential
  - What roles are priorities? What do parents do best?
- Joint attention, communication and engagement are key
  - What specific strategies are most effective?
- Interaction with peers is beneficial
  - How soon? How much? Who? Doing what?

Early Social Interaction Project

Amy Wetherby & Juliann Woods, Co-Directors

- Comprehensive, coordinated services guided by IFSP
- Community based programs in natural environments
- Specialized services with intensity matching needs of child and family
- Individualized curriculum emphasizing communication, play, and social interaction
- Methods and intensity modified every 3 months as needed based on child's progress
- Routine based intervention in meaningful activities
- Positive behavioral support
- Family education and participation

Why Family Participation?

- Primary force behind the child's program now and in the future
- Vested interest in child's behavior and interaction development and use
- Time and resource availability
- Information, support, and skills
- Improved child and family outcomes

Why Routines?

- Functional and meaningful to children and caregivers
- Can be implemented within variety of natural environments of young children
- Multiple outcomes can be embedded
- Motivating and reinforcing for child
- Opportunities for repetition are inherent
- Increased independence is beneficial

More Reasons Why…

- Generalization is implicit
- Scaffolds are provided for caregivers
- Portable for daily use
- Common, everyday materials of child and family
- Progress can be monitored
- Consistent with legislation and developmentally appropriate practice

Why Not Routines?

- Routines can become rituals
- Increased expectations within "comfort zone" can induce challenging behaviors
- Routines can become too routine for caregivers
- Dispersed trials may reduce speed of skill acquisition
- Requires child to be motivated or at least engaged

Why Family Guided Routine-based Intervention?

- Individualized for interests and concerns of child and family
- Links assessment to intervention by embedding functional and meaningful targets
- Guided by family priorities and preferences for services within routines and activities
- Congruent with places and processes of natural environments legislation

Prioritizing Intervention Targets

- Family concerns and priorities
- Disability specific priorities
  - Social interaction and relationships
  - Communication and language
  - Engagement and play
- Cognitive, adaptive, sensory and motor as prioritized by family and team as important

Skills to Target in Routines

- Does the child need or use this skill in other routines?
- Does the child need this skill both now for this routine and in the future?
- Will learning this skill set the stage for learning more sophisticated skills?
- Does someone else currently help perform this skill?
- Will learning this skill decrease challenging behaviors?
- Will learning the skill enable the child to be more like peers?
- Will learning the skill enable the child to participate in the community?

Adapted from Bricker & Woods Cripe (1992) and Noonan & McCormick (1994)

Initial Targets for Social Interaction

- Accepting and giving positive touch
- Accepting and staying in proximity
- Eye gaze with other
- Social smile and gestures
- Participating in group action
- Turn taking
- Showing and giving in play

Initial Targets for Communication

- Establish reciprocity
- Conventionalize signals for request, protest, attention
- Expand communication functions
  - Request social routine or comfort
  - Call or greet
  - Show off
  - Request permission or information
  - Comment on object/action
- Establish initiation skills
- Replace unacceptable behaviors with readable signals
- Develop persistence of attempts and repairs

Initial Targets for Engagement and Play

- Attention to object/event
- Joint attention
- Variety in play actions/toy use
- Activity participation
- Parallel play
- Combinatory social and play actions
- Use of object with conventional actions
- Exploratory actions on objects
- Functional play with objects
- Combinatorial actions and play
- Applies action scheme to self and with others
- Use of one object to stand for another

Emerging Language Targets

- Increase conventional signals including distal gestures and complex vocalizations
- Direct attention to self before communicating
- Increase intelligible and unambiguous acts
- Expand vocabulary (receptive & expressive)
- Increase flexibility across people and places
- Increase conventional use of repetition if child uses echolalia

Building Routines with Caregivers

- Clearly identify intervention routines and activities of interest to child and family
- Match intervention targets (outcomes) to the appropriate routine or activity
- Observe sequence and strategies used
- Embed as appropriate across entire routine
  - Initiation and set up
  - Activity and clean up
- Embed targets within typical sequence UNLESS sequence is dictated by child's disorder

Coordinating Interventions

- Family and team must coordinate:
  - Targets within routines and activities
  - Sequence and frequency of embedding
  - Facilitators and locations of intervention
  - Methods used to initiate interaction, maintain child's engagement, encourage participation, and motivate child
  - Data collection and analysis

Systemizing Caregiver Interventions

- Identify opportunities to practice each outcome clearly… "more" isn't better
- Carefully plan who will be involved, when, and where it will occur
- Provide caregivers time to practice and problem solve "what might happen if…"
- Use natural cues with the routine
- Establish system for monitoring progress

Remember to…

- Focus on what the child IS DOING, rather than what the child is not doing; on what the child's INTERESTS are, rather than the limitations
- Recognize the relevance of the child's conventional and unconventional behaviors for communication and interaction