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Naturalistic Developmental Interventions in Autism

- G. Robert Buckendorf, PhD
Buckendorf Associates, LLC
- Assistant Clinical Professor, Oregon
Health Science University
- bob.buckendorf@gmail.com

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Learning Objectives

After this course, participants will be able to:

- ~ Describe characteristics of naturalistic interventions.
- ~ List strategies designed to help children develop early communicative skills.
- ~ Describe joint attention (JA) and methods of eliciting JA.
- ~ Describe parent mediated responsive strategies caregivers can use to build pivotal behaviors in their children.
- ~ List at least 3 characteristics of the Early Start Denver Model, one example of an empirically validated naturalistic intervention

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Effective Interventions- National Research Council, 2001(NRC)

- ~ Start early and intensive (every day, all day)
- ~ Always work on engaging the child- looking, vocalizing, showing, modeling, arranging
- ~ Activities that are developmentally appropriate; target functional and spontaneous language
- ~ Goal driven and track changes (i.e., initiate and respond to joint attention, coordinate gesture and vocalization)

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Clinical assessment and management of toddlers with suspected ASD: Insights from studies of high-risk infants. Pediatrics, May, 2009

- ~ **The core interventions for infants must address the way infants learn and include**
- ~ -natural learning environments,
- ~ -responding to child initiations,
- ~ -sensory-motor exploration,
- ~ -the development of nonverbal intentional communicative acts and reciprocal play with social partners.

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Core Communication Deficits in ASD

(National Research Council)

- ~ Joint attention (“Keys of the Kingdom”- Paul Monde)- Coordinating attention between people and an object- point to share, difficulty attending to a social partner, gaze shift, sharing affect with another, follow gaze or point, showing. Lack of initiating JA discriminated ASD from all other disorders.
- ~ Use of symbols- words, gestures, functional use of objects, symbolic play.

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Current Issues

(Much from ESDM Manual)

- ~ Working with much younger children; allows us to change trajectory earlier but also forces us to adapt our treatments to younger children
- ~ More current research (Schreibman, et al, 2015) showed the importance of focus on early language precursors including joint attention, social engagement, and the importance of the emotional exchange between the child and clinician.

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- ~ Typical child development provides the best template for treatment
- ~ Children learn best when the curriculum is developmentally appropriate, is delivered in meaningful playfully appropriate contexts, and when affective, child initiated play is facilitated.
- ~ Treatment must be matched to the child's developmental level, be interesting, and we must wait to give the child enough time to learn to be an initiator.

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- ~ Children learn best when engaged in play and activities with others that is stimulating, reciprocal, and occurs in contexts other than a clinical or educational environment, e.g., home at bath time or mealtime.
- ~ Targeting precursor skills such as joint attention, gesture, and shared affect facilitated the later acquisition of language (Kasari et al. 2008).
- ~ Skills should be taught in the context of everyday activities with a variety of people using a variety of toys so that carryover into life occurs naturally.

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- ~ In current, naturalistic interventions, children learn that meanings are shared between people as we help them use gestures such as a look or point, vocalizations, and words meaningfully.
- ~ Children learn to share meaning with others using gestures and words when our treatment focuses on attending to and imitating others, sharing feelings and interests through joint attention, looking together at something happening to both of us, and engaging in coordinated, reciprocal activities.

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Early Start Denver Model (ESDM)

- ~ Pediatrics, 2009. Randomized controlled trial of an intervention for toddlers with Autism: The Early Start Denver Model.
- ~ After two years of ESDM treatment in a randomized controlled trial, children improved significantly in IQ, adaptive behavior, and in lessening of autism symptoms.

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ESDM Treatment Model

- ~ “Teaching strategies that target reciprocal turns driven by affect, use of real-life materials and activities, teaching caregivers to be responsive and sensitive to child cues, and focus on both verbal and gestural communication. Uses developmental curriculum that focuses on language, social skills, cognition, play, fine and gross motor skills, and personal independence at four levels.” (ESDM Manual)

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Strategies from Discrete Trial

- ~ Capturing attention
- ~ Antecedent-Behavior-Consequence
- ~ Prompt desired behaviors
- ~ Manage consequences
- ~ Fade prompts
- ~ Shape behaviors
- ~ Chaining behaviors
- ~ Functional Assessment

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Strategies from PRT

- ~ **Motivation through:** Child Choice and follow
- ~ Turn taking; lead and follow
- ~ Reinforcing all attempts and reinforce with direct relationship to behavior
- ~ Interspersing maintenance tasks
- ~ **Response to multiple cues** by vary antecedents, set up stimuli with multiple cues
- ~ Teach children to give same behavior with a variety of antecedents

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Strategies from ESDM

- ~ Adults optimize child's affect
- ~ Adults use positive affect
- ~ Turn-taking and engagement throughout
- ~ Adults respond sensitively to child's cues
- ~ Multiple and varied communicative opportunities occur
- ~ Elaboration of activities- multiple materials and many activities from many domains

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ESDM Strategies

(An Early Start for Your Child with Autism, 2012)

1. Capture your child's attention
2. Have fun with sensory social routines
3. Back and forth interactions
4. Nonverbal communication; "Body Language"
5. Imitation
6. ABC's of learning
7. Joint attention
8. Pretending; "Play time"
9. Speech
10. Put it all together

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I. Capture Your Child's Attention

- ~ Children learn by paying attention to the voices, faces, and movements of others. If they aren't, they are not learning about social communication and play.
- ~ Floor time
- ~ Hanen

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Join in by following your child's lead

- ~ Don't change your child's activity just because it seems to have no purpose. Instead, engage your child by:
 - ~ Active listening; cheer child, help and engage child with objects; "I'm interested in what you are doing"; join the child's activities
 - ~ Narrate- describe child's activity using short words or phrases; no teaching but just describe using simple language
 - ~ Offer help- hand her food she wants; Wait, wait, communicative temptations

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2. Fun with Sensory social routines- use your body

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- ~ Find the rhythm and **smile**; face to face; reciprocity (follow each other)- highly motivating games in back and forth style (tickle); wait, wait, wait to allow the child to be the leader
- ~ Peek a boo, patty cake, spinning and bouncing games, bubbles, balloons, tops, jack in boxes
- ~ Pause before the climax, get your child's attention, and "GO. Then wait for the child to tell you some way "do it again"

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Change the routine slightly; Think; don't let the children get stuck

- ~ Make sure its balanced; build longer chains of fun
- ~ Optimize child's energy level. Dial it up or down
 - Bath time, dressing, massaging, squeezing
 - Social songs

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5. Imitation

This is how kids learn; it's key
We learn by watching but more so by
doing

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- ~ Imitating sounds; echo child, songs and finger games- wait for child to do part
- ~ Imitate action on objects (imitate your child, then make a variation)
- ~ Imitate gestures and body movements (finger plays and songs)-pick song with gestures, prompt gesture, fade prompt
- ~ Imitate and expand actions; add variations
- ~ Do this in the joint activity framework (set up, theme, variation, closing)

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JASPER

(Connie Kasari, UCLA)

“Joint Attention, Symbolic Play, Engagement, Regulation”; Schreibman, et al, 2015.

- ~ Joint attention (JA)- Core deficit in autism; must attend to what others attend to; learn from others; share information and their point of view; JA is drawing someone's attention to something;
- ~ Children who initiate JA have better spoken language

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Kasari

- ~ Targeting JA results in more showing, commenting, and interaction initiated by a child
- ~ Joint attention group spent more time sharing coordinated joint looks between intervener and object of attention
- ~ Responding to joint attention (e.g., following a point to a picture) predicts pre-school children's language outcome 8 years later (Sigman and Ruskin 1999)

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- ~ Play Activities- increase engagement in play activities with adults; pretend with toys
- ~ Quickly respond to child's initiations and match my language complexity and frequency to his; speak less and let child speak more
- ~ Set up environment so the child uses her own ideas and but respond and expand her language; keep environment simple

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Relationship Focused Intervention; Mahoney, G. & Perales, F. 2005

- ~ Developmental intervention that encourages parents to use responsive strategies, i.e., take one turn and wait, during interactions with their children.
- ~ Participated in 31 one-hour intervention sessions; 80% of the parents became more responsive, and increases in the child's pivotal behaviors promoted through parental responsiveness was significant related to improvements in the child's developmental functioning.
- ~ Children in study made statistically and clinically significant improvements in functioning

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Responsive Teaching (McDonald & Mahoney) responsiveteaching.org

- ~ Parent mediated; uses strategies that help children use pivotal behaviors (cognition, communication, social emotional functioning, motivation-interest and enjoyment); teach parents to be proactively responsive to their children and shift lead to child; parents can be effective.
- ~ Reciprocity- joint activity and routines; shared power
- ~ Contingency- timing
- ~ Shared control- moderate direction
- ~ Affect- warmth, enjoyment
- ~ Match- developmental, interests of child

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Specific strategies

- ~ Reciprocity
 - Engagement; be physically available, play frequently together; expect my child to interact (versus learned helplessness)
 - Balance; “Take one turn and wait”, play with sounds back and forth, communicate less so my child has to communicate more; child learns to interact with “someone” instead of using the parent as a tool or ignoring them; “eyes” are very important so work at eye level

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~ Affect

- ~ Animation; wait with anticipation, respond to child in playful ways, be more interesting than my child's distractions, use nonverbal gestures and intonation
- ~ Enjoyment; playful partner, interact for fun, turn routines into games, repeat activities my child enjoys
- ~ Warmth; be physical and gentle, respond with affection to child's cries, comfort child
- ~ Acceptance; value what child is doing, treat my child's fears as meaningful, accept what my child does, talk about funny and novel things my child is doing

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Caregiver Synchronicity; Siller and Sigman, JADD, 2002

- ~ Children whose caregivers had higher levels of synchronous (joint attention, focus on child's toy choices, caregiver showed/pointed to or talked about objects to which the child was already attending) behaviors developed superior communication over a period of 1, 10, and 16 years. Caregiver's sensitivity to child's interests provides purposeful experience.

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Association between parental interaction style and children's joint engagement

(Patterson, Elder, Gulsrud, Ksari, 2013)

- ~ The children of parents who were more responsive spent more time in child-initiated joint engagement, while children of parents who were more directive spent more time in parent-initiated joint engagement. The children who initiated joint engagement more had better social behaviors
- ~ Results demonstrate that child initiations and global social behavior ratings are associated with parental responsiveness. Responsivity may be a critical factor to facilitate children's initiations

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Combining Direct and Indirect Strategies- Ingersoll & Dvortcsak, 2010

- ~ Follow child's interest, imitate child, animation; playfully obstruct, treat action as purposeful, model and expand language and play, environmental arrangement
- ~ Require a response (answer question); prompting and reinforcement; imitation; take turns

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- ~ Mahoney, G. & Perales, F. 2005. Relationship-Focused Early Intervention with Children with Pervasive Developmental Disorders: A Comparative Study. Developmental and Behavioral Pediatrics; 26.

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- ~ Ingersol, B. & Dvortczak, A. 2010. Teaching Social Communication to Children with Autism. Guilford: New York.

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- ~ Schreibman, Dawson, Stahmer, Landa, Rogers, McGee, Kasari, Ingersol, Kaiser, Bruinsma, McNerney, Wetherby, & Halladay. 2015. Naturalistic Developmental Behavioral Interventions: Empirically Validated Treatments for Autism Spectrum Disorder. J. of Autism and Developmental Disorders.

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Websites

- ~ firstsigns.org (videos, diagnosis, treatment)
- ~ autismspeaks.org (parent advocates, research, 100 day kit, autism and medication; safe use kit)
- ~ www.helpautismnow.com/international.html
- ~ responsiveteaching.org

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