

Family-Based Coaching with Young Children with Autism Spectrum Disorder


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Pedro A. Rivera, Secretary of Education | Teresa D. Miller, Secretary of Human Services





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Outcomes

1. Increase understanding of what Family-based coaching is and the evidence elements supporting the use of this practice
2. Identify strategies to support parent use of Applied Behavior Analysis strategies within their everyday routines.
3. Increase awareness of the Autism Navigator as a resource to support coaching for families with children on the autism spectrum

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Side note





Find My Way | What is Autism? | Family Resources | Courses | About | Get Involved

Autism Navigator® for Early Intervention Providers



This interactive web-based professional development course is designed to increase the capacity of early intervention providers to better serve infants and toddlers with or at risk for ASD and their families. The 30-hour self-paced course at the Knowledge and Skills level integrates current research with evidence-based illustrations covering 5 topics: 1) Identifying Early Detection, 2) Collaborating with Families, 3) Developmental Perspectives, 4) Evidence-based Intervention Strategies, and 5) Addressing Challenging Behaviors. A certificate of completion and continuing education units are available upon completion of each unit. The Mastery level course supports ongoing learning and application with extensive libraries of video clips and self-guided lessons for providers to gain more experience practicing and implementing the concepts and to access more video examples to better serve families. Using strategies based on implementation science to support state-wide or regional system change, the Mastery level is the initial training of Autism Navigator regional specialists to monitor and support learning of other early intervention providers. Users are invited to attend monthly interactive sessions for each course level with research briefs, focused topics identified by learners, and video review with chat discussion and be part of a larger Autism Navigator learner community.


Group rates are available for Autism Navigator courses.

[LEARN MORE](#) [HOW TO ENROLL](#) [LOGIN](#)

Creating a strong foundation


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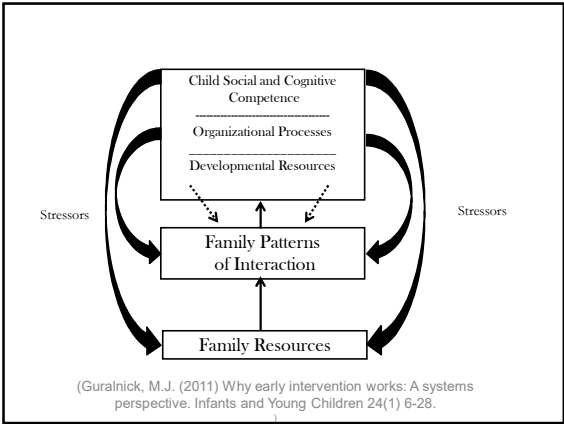
“There is no such thing as a baby. There is a baby and someone”
DH Winnicott (1960)

There is a baby and a mom, dad, caregiver....



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What research has brought us here? 

Credit: Autism Navigator Knowledge and Skills Course, slide 12

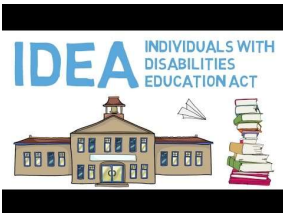
Roles of Families in Intervention



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Individuals with Disabilities Act 

Credit: Autism Navigator Knowledge and Skills Course, slide 16




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Learning in Natural Environments 

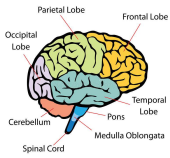
- Children learn by doing
- Everyday activities offer many opportunities
- IDEA Part C regulations
- Using what the family needs and wants to do is a natural outcome for child
 - Goal is to support their participation, interaction and independence

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Early Brain Development

What does the science tell us?




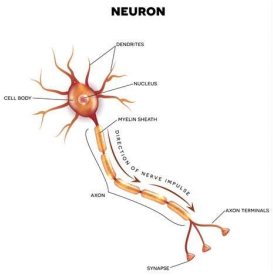
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Brain Connectivity




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The Neuron



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Synaptogenesis




Synaptogenesis—creation of connections between neurons


- More frequent communication = stronger connections (Society for Neuroscience, 2016).

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Neuroplasticity



Neuroplasticity—brain's potential to create or change networks of neurons based on experiences (Society for Neuroscience, 2016).



Infants have a great deal of flexibility, or neuroplasticity, in their brains. (Society for Neuroscience, 2016).

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Types of Neuroplasticity



There are generally two types of neuroplasticity (Grigorenko, in press):



Experience-expectant


Experience-dependent

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Experience-Expectant Neuroplasticity

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- Connections form based on exposure to experiences that most people would have in their environment.
- Connections made **ONLY** if the person is exposed to the experience.
- The brain is **expecting** these types of experiences (National Research Council & Institute of Medicine, 2000).
- *For example, the ability to develop the part of our brain that processes vision depends on taking in light through our eyes.*



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Experience-Dependent Neuroplasticity

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- Changes happen only if the child has the environmental stimuli to build those connections (Grigorenko, in press).
- **New experiences make new connections.**
- *For example, children living in an agricultural, farm community develop awareness of weather patterns and the responses of animals in ways that children growing up in urban environments do not.*




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Timing—Sensitive and Critical Periods

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- The timing of experiences can affect brain development.
- Animal studies have shown that there are certain windows of time during which the young are especially sensitive to their environment (Fox, 1992; Hubel et al., 1997).




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Sensitive Periods



- Sensitive periods—time in development when a brain region is most open to learning or refining a particular skill or brain function.
- Different parts of the brain have different sensitive periods.

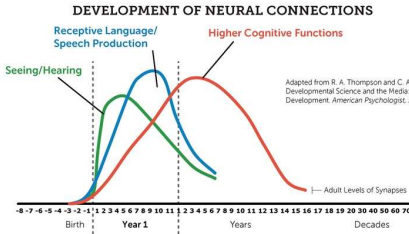
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Sensitive Periods

DEVELOPMENT OF NEURAL CONNECTIONS



Adapted from R. A. Thompson and C. A. Nelson (2001). Developmental Science and the Media: Early Brain Development. *American Psychologist*, 56(1), 5–15.

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Pruning

- Circuits that “fire” more often are kept, whereas those that are not used are removed.
- Pruning allows the brain to adapt to its environment.

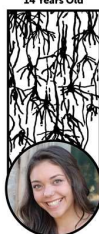
At Birth



6 Years Old



14 Years Old




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What is a routine??

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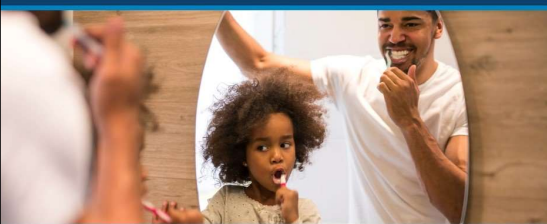
- ❑ Predictable, Repetitive, Functional, Logical & Adaptable
- ❑ Occur in a common place
- ❑ Are typical or everyday activities
- ❑ Are regular, unvarying habitual and rote procedures
- ❑ Are NOT a schedule



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Connectivity: Bedtime Routines

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In each round, please describe activities associated with bedtime:

1. Routines that happen
2. Feelings a child may have
3. Things going on in the house/environment

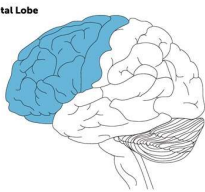
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Bedtime Routines Debrief

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What part of the brain is stimulated during bedtime routines?

- What physical and sensory experiences did the child have?
- What did he hear and see?
- What feelings does he connect with bedtime?
- What cues in the environment does he associate with bedtime?



Frontal Lobe

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What Providers Can Do

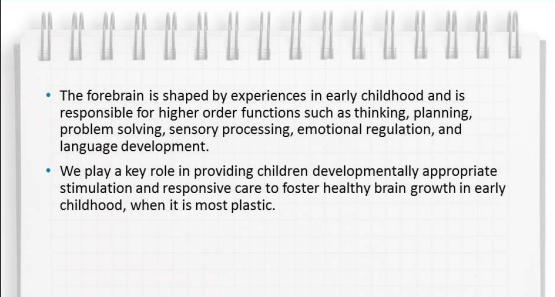



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- Set realistic expectations based on brain development.
- Be aware that the experiences we provide are building brain architecture.
- Provide positive relationships and supportive, enriching environments.

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Additional Key Messages



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- The forebrain is shaped by experiences in early childhood and is responsible for higher order functions such as thinking, planning, problem solving, sensory processing, emotional regulation, and language development.
- We play a key role in providing children developmentally appropriate stimulation and responsive care to foster healthy brain growth in early childhood, when it is most plastic.

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How does this look in action:

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Autism
NAVIGATOR for EI Providers

Unit 2: Collaborating With Families

IDEAS | GO HOME | TOOLS | HELP | CRED



Autism Navigator: Knowledge and Skills Module 2 Slide 36

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Keep the parent-child relationship at the center of everything we do.

Support competence, confidence, and positive relationships.

Video

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Coaching in Everyday Routines

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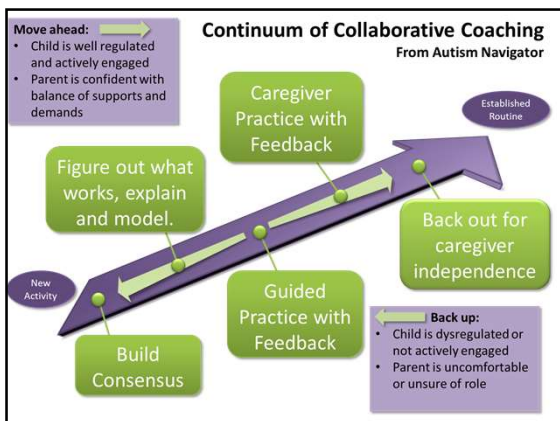
Competence and confidence

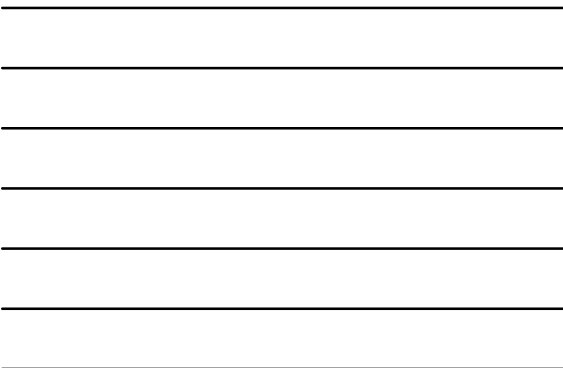
The experiences afforded a parent to strengthen existing and build new parenting capacity must also influence or change a parent's sense of confidence and competence if the parent is to sustain engagement in parenting behavior


- A *sense of competence* refers to the (self-efficacy) belief that one's behavior will have the expected effect or outcome
- A *sense of confidence* refers to the (self-efficacy) belief that one has the capacity to perform a task competently

Carol Trivette's training in PA, 2014

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- **Family engagement is critical to a high quality early childhood program. Research in early intervention tells us parents are a young child's best teacher**
- **The Autism Navigator is a resource demonstrating coaching practices which can increase caregiver's competence and confidence to support their child's development now and in the child's future.**
- **Embedded in family-based coaching are ABA practices. Family-coaching supports parent's ability to implement ABA strategies, thus increasing time engaged in learning. Family-based coaching is recognized by the CEC's Division for Early Childhood as an evidence based practice.**
- **BCBA credits**

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Coaching




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- Coaching over time
 - Brandon from 32 months to 38 months

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What is "evidence based?"




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The diagram illustrates the Evidence-Based Practice cycle. It features a central orange circle labeled "EVIDENCE-BASED PRACTICE". Three arrows form a clockwise cycle around this central circle. The top arrow points from "Teacher's Expertise" to "Best Available Evidence". The right arrow points from "Best Available Evidence" to "Ongoing Assessment". The bottom arrow points from "Ongoing Assessment" back to "Teacher's Expertise".

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Evidence-Based Practices



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Defining Evidence Based Practice



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Source: Autism Navigator



Early Childhood Intervention for young children w ASD

National Research Council, NPDCI/FPG, Research Institutions
e.g., Earlier the better, focus on soc-communication, behavioral principles

Early childhood special education
DEC recommended Practices
E.g., family centered, explicit instruction, individualized plans

Early childhood education & mental health
Zero to Three, NAEYC, etc
E.g., secure attachments, routines, literacy exposure

General child growth & development
Amer Academy of Pediatrics, National Institute of Health
E.g., screen time, sleep, nutrition, movement

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Process Used to Identify EBP



- Identified outcomes related to the core features of autism
- Reviewed literature related to these outcomes as well as the key words autism, ASD, and autism spectrum, limited by age (birth – 21)
- Identified and grouped teaching interventions that addressed these outcomes/domains
- Determined criteria and whether an evidence base supported the practices

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Meta Analysis



- Statistical technique for combining the findings from independent studies
- Used to assess the **clinical effectiveness** of interventions by combining data from research trials
- Provides a precise **estimate of treatment effect**-weighing the size of study results
- Validity of MA depends on the quality of the systematic review on which it is based

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Implementation Science




The study of methods that influence the integration of evidence-based interventions into practice settings.

- (a) what kinds of interventions are most efficacious (and for whom)
- (b) what variables moderate and mediate treatment gains and improved outcomes
- (c) the degree of both short-term and long-term improvements that can reasonably be expected.

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Fidelity



- **An Evidence Based Practice is implemented**
- **Treatment Integrity- degree to which you are correctly implementing the practice**
 - How long should you continue the baseline and treatment phases?
 - Is the team including parents able to accurately implement the treatment?
 - What environmental variables influence the effectiveness?
 - Determination of whether the treatment is effective?

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First: Do No Harm





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- Antifungal treatment
- Aquatic therapy
- Auditory Integration Therapy
- *Chelation Removal of Toxic Metals
- Cranio-sacral and chiropractic therapy
- Dietary interventions
- Transcranial Direct Current Stimulation


- *Hyperbaric oxygen therapy
- Medicinal marijuana
- Neuro-immune dysfunction and antiviral therapy
- Sensory gym
- Traditional and indigenous healing
- Stem cell therapy
- Facilitated Communication

(Seri & Lyons, 2011)



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ASD Evidence Based Practices



- Tested in high quality research designs and found to be efficacious
- **Comprehensive Treatment Models** - conceptually organized packages of practices and components, designed to address a broad array of skills and abilities of C w/ASD &F
- **Focused Interventions**- individual instructive practices or strategies that teachers or practitioners use to teach specific educational targets-skills and concepts- to C w/ASD.

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Comprehensive Treatment Models



- **LEAP** Learning Experiences ad Alternative Programs (preschool)
- **TEACCH** Treatment and Education of Autistic and Communication related handicapped Children (preschool)
- **ESDM** Early Start Denver Model (Toddlers)
- **PRT** Pivotal Response Training (Toddlers/preschool)
- **ESI** Early Social Interaction (*Autism Navigator*)
- Other

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Considerations

• Not possible to determine which elements of the package are responsible for progress

• Branding- need a well written manual specifying the content(curricula) and teaching process to be used

• Branding-increase expense

• Geography-usually done in lab settings limiting availability to specific communities

• Culture- majority of studies do not include diverse participant groups

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Implementation in EI

Evidence Each IFSP/IEP is a research study

Subject Unit of study/child and family

Methods Evidence based
Practical strategies

Results Measurement of outcomes/goals
Progress monitoring

Discussion Limitations and generalizations

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0-2

• Behavioral

• Comprehensive Behavioral Treatment for Young Children (CBTYC)

• Joint Attention

• Naturalistic Teaching Strategies (NTS)

3-5

• Antecedent

• Behavioral

• CBTYC

• Joint Attention

• Modeling

• NTS

• Peer Training

• Pivotal Response Training (PRT)

• Schedules

• Self-management

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Behavior Based Interventions

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In early intervention, the emphasis is on *Behavioral Practices* in natural environments – not on packages of interventions.

We build in **reinforcement, prompting, modeling**, etc. while coaching families to support their child's engagement and development


Remember, Evidence Based Practices are not something that only BCBAs or specialists in ABA do.

When identifying strategies, it is critical to know why we apply a specific strategy for a particular child when working on an outcome.

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- Antecedent-based Interventions
- Functional Behavioral Analysis
- Modeling
- Naturalistic intervention
- Parent –mediated Implemented Intervention
- Pivotal Response Training
- Prompting
- Reinforcement
- Social Skills Training
- Video Modeling



(Dolan Cox Shaw, Kucharczyk, 2014, Evidence-Based Early Identification and Intervention for Infants and Toddlers with ASD and Their Families, CEC Conference presentation)

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Common Program Elements Model Programs for Young Children with

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- **Earlier is better**
- **Curriculum emphasizes skill development in ASD core deficit areas**
- **Planned, repeated teaching opportunities w/ Generalization Strategies.**
 - Individualized goals and outcomes
 - On-going monitoring and program improvement
- **Predictability and Routines**
- **Functional Approach to Problem Behaviors**
- **Planning for Transitions**
- **Family Involvement**
 - Sufficiency of support for adults
- **Intensive Intervention/Active Engagement time @ 25 hours/week**

National Research Council, Dawson, et al

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Antecedent-Based Strategies

- Arranging the environment
- Changing the schedule/routine
- Structuring time
- Using highly preferred activities/activities to increase interest level
- Offering choices
- Altering the manner in which instruction is provided
- Enriching the environment so that learners with ASD have access to sensory stimuli that serve the same purpose as the interfering behavior (e.g., object to hold)
- Implementing preactivity interventions (cue the next activity or schedule change)

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Video



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Key Consideration Of EBP

- Behavior based practices - implemented in a variety of ways
- **Fidelity** of implementation
- Intentional teaching is required
- Learning activities must be motivating
- Learning in the natural environment is important

Bottom line- EIs need to have the knowledge and ability to implement the critical ingredients of effective intervention for each child and family

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Fidelity



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