

# Current Early Treatment and Educational Services for Autism Spectrum Disorder: Ages 0-5 years

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# Disclosures

- American Association for the Advancement of Science
- Georgia Department of Education (previous)
- Georgia Department of Public Health (current)
- No other financial disclosures



# Overview

- Facts regarding ASD
- Key features for young children with ASD
- Evidence base for ASD treatment: Simpson (2004); Simpson et al. (2005)
- Services received by young children with ASD
  - Stahmer et al. (2005)
  - Green et al. (2006)
- What is happening in Georgia?
  - OSEP (2012) data
  - What services are children receiving?
    - Hess et al. (2008)
  - How are teachers trained to provide those services?
  - Current ASD-related projects



# Facts

- ASD occurs in 1 out of every 68 children
  - 1 in 64 for Georgia (CDC, 2014)
- Increasing numbers of children enrolled in
  - Community-based child care settings
  - Public school programs Preschool-12<sup>th</sup>
- Educational legislation mandate evidence-based practices
  - No Child Left Behind Act of 2001
  - Individuals with Disabilities Education Improvement Act of 2004
- Teachers need experience working with this population
- Research indicates individuals with ASD can make dramatic progress in educational settings



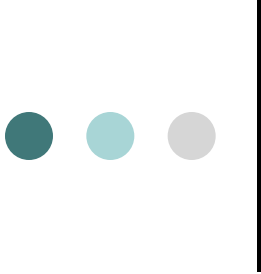
# Key Features for Young Children with ASD

- National Research Council (2001)
  - Hours intensive
    - 5 days per week
    - 25-40 hours per week
  - Year-long programming
    - Low student-to-teacher ratios
      - 2 students with ASD to every adult
  - Communication important
    - Expressive verbal language
    - Receptive language
    - Non-verbal communication skills
  - Social skills important
    - Ongoing interactions with typical children
  - Increase appropriate engagement
    - Developmentally appropriate activities
  - Parental involvement

# Evidence base for ASD

treatment: Simpson (2004);  
Simpson et al. (2005)

- 33 common treatment strategies for individuals with ASD
- Reviewed research on effectiveness
- Categories of treatments
  - Interpersonal relationships
  - Skill based
  - Cognitive
  - Physiological/Biological/Neurological
    - Did not include prescription medications
  - Other

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- Scientific basis for treatment
    - Scientifically-based practice (SBP)
      - “significant and convincing empirical efficacy and support”
    - Promising practice (PP)
      - “efficacy and utility with individuals with ASD”
    - Limited support (LS)
      - “lacked objective and convincing supporting evidence but had undecided, possible, or potential utility and efficacy”
    - Not recommended (NR)
      - “lack of efficacy and that might have the potential to be harmful”



# Interpersonal Relationship Interventions and Treatments

Intervention/Treatment	Scientific Basis
<b>Holding Therapy</b>	<b>Not Recommended</b>
Gentle Teaching	Limited Support
Option Method (Son-Rise)	Limited Support
Developmental, Individual-Difference, Relationship-Based Model (Floor Time)	Limited Support
<i>Play-Oriented Strategies</i>	<i>Promising Practice</i>
Pet/Animal Therapy	Limited Support
Relationship Development Intervention (RDI)	Limited Support





# Skill-Based Interventions and Treatments

Intervention/Treatment	Scientific Basis
<i>Picture Exchange Communication System (PECS)</i>	<i>Promising Practice</i>
<i>Incidental Teaching</i>	<i>Promising Practice</i>
<b>Facilitated Communication</b>	<b>Not Recommended</b>
<i>Augmentative and Alternative Communication (AAC)</i>	<i>Promising Practice</i>
<i>Assistive Technology (AT)</i>	<i>Promising Practice</i>
Van Dijk Curricular Approach	Limited Support

# Skill-Based Interventions and Treatments

Intervention/Treatment	Scientific Basis
<b>Applied Behavior Analysis (ABA)</b>	<b>Scientifically Based Practice</b>
<b>Discrete Trial Training (DTT)</b>	<b>Scientifically Based Practice</b>
<i>Joint Action Routines (JARs)</i>	<i>Promising Practice</i>
FAST ForWord	Limited Support
<b>Pivotal response Training (PRT)</b>	<b>Scientifically Based Practice</b>
<i>Structured Teaching (TEACCH)</i>	<i>Promising Practice</i>



# Cognitive Interventions and Treatments

Intervention/Treatment	Scientific Basis
<i>Cognitive Behavioral Modification (CBM)</i>	<i>Promising Practice</i>
<i>Cognitive Learning Strategies</i>	<i>Promising Practice</i>
Cognitive Scripts	Limited Support
<i>Social Stories</i>	<i>Promising Practice</i>
Power Cards	Limited Support
Cartooning	Limited Support
<i>Social Decision-Making Strategies</i>	<i>Promising Practice</i>
<b>Learning Experiences: An Alternative Program for Preschoolers and Parents (LEAP)</b>	<b>Scientifically Based Practice</b>



# Physiological/Biological/ Neurological Interventions and Treatments

Intervention/Treatment	Scientific Basis
Irlen Lenses	Limited Support
<i>Sensory Integration (SI)</i>	<i>Promising Practice</i>
Auditory Integration Training	Limited Support
Megavitamin Therapy	Limited Support
<i>Pharmacology</i>	<i>Promising Practice</i>



## Other Interventions and Treatments

Intervention/Treatment	Scientific Basis
Art Therapy	Limited Support
Music Therapy	Limited Support



# Services received by young children with ASD



# Stahmer et al. (2005)

- Focus groups in California
- 22 early interventionists
  - 0-3 year olds (45%)
  - 3-5 year olds (55%)
- Guided interview
  - What interventions are in use?



- Overall reported use of strategies

- ABA 73%
- Discrete Trial Training 64%
- Floor Time 68%
- Occupational Therapy (SI) 77%
- Music Therapy 23%
- PECS 95%
- PRT 32%
- Sign language 50%
- Social Stories 23%
- TEACCH 55%
- Minimal use of intervention programs 18%





- Strategies by age group

**0-3 yrs**

PECS  
Floor Time  
ABA  
Discrete Trial  
Sensory Integration  
Sign language  
PRT  
Social Stories  
TEACCH  
Music Therapy  
Minimal use

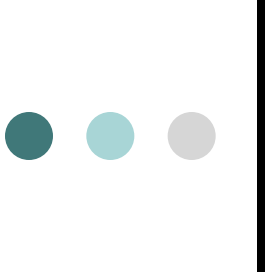
**3-5 yrs**

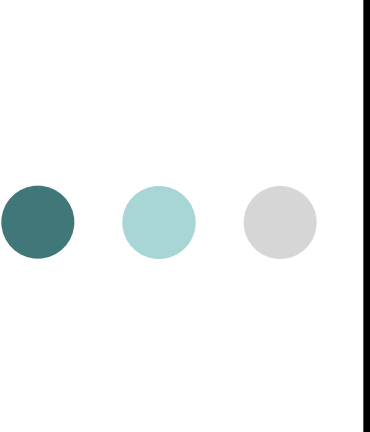
Sensory Integration  
PECS  
ABA  
Discrete Trial  
TEACCH  
Floor Time  
Sign language  
PRT  
Music Therapy  
Minimal use  
Social Stories



# Green et al. (2006)

- Online survey of 552 parents
  - 111 treatments surveyed
  - Treatment categories
    - Standard therapy 69.9%
    - Other skills based 61.4%
    - Skills based on ABA 56.3%
    - Medications 52.5%
    - Physiological 46.7%
    - Vitamin supplements 42.6%
    - Alternative diets 26.8%
    - Alternative therapies/medications 25.9%
    - Relationship-based 19.7%
    - Combined programs 16.3%
    - Detoxification 8.9%

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- On average, parents used
    - 7 currently (1-47)
    - 8 in past (1-39)
  - Number of treatments by age
    - $\leq 5$  7.6
    - 6-10 8.1
    - 11-14 6.7
    - 15-21 4.8
  - Number of treatments by diagnosis
    - Mild Autism 7.2
    - Severe Autism 8.7
    - Asperger's 4.5



# What's happening in Georgia?



# OSEP (2012) Data - Georgia

- 13,667 students with Autism eligibility
  - 902 3-5 year olds
  - 12,765 6-21 year olds



# What services are children with ASD receiving?

- Hess et al. (2008)
  - Online survey of teachers across Georgia
  - 185 teachers responded
    - 226 children with ASD
  - Represented all GA regions
  - Used Simpson et al. categories
    - Stahmer et al.
    - Green et al.



# Results - Teachers

## ○ Classroom Type

● Collaborative	6.45
● Combination	8.60
● General Education	20.43
● Resource	21.55
● <b>Self-Contained</b>	<b>26.88</b>
● Other	15.05

## ○ Highest Degree Earned

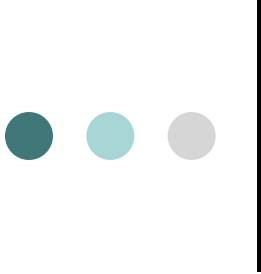
● Bachelor's degree	13.51
● <b>Master's degree</b>	<b>27.57</b>
● Educational Specialist degree	4.32
● Doctoral degree	0.54

# Preschoolers receive

- Top Strategies reported in use
  - Floor Time
  - Incidental Teaching
  - Visual Schedules
  - Social Stories
  - Sensory Integration
  - Music Therapy
  
- Scientifically evidence based<sup>1</sup>
  - **Scientifically-based**                      **0%**
  - Promising practice                      50%
  - Limited support                      33%
  - **Not recommended**                      **0%**
  - Not rated                      17%

<sup>1</sup> Simpson (2004); Simpson et al., 2005



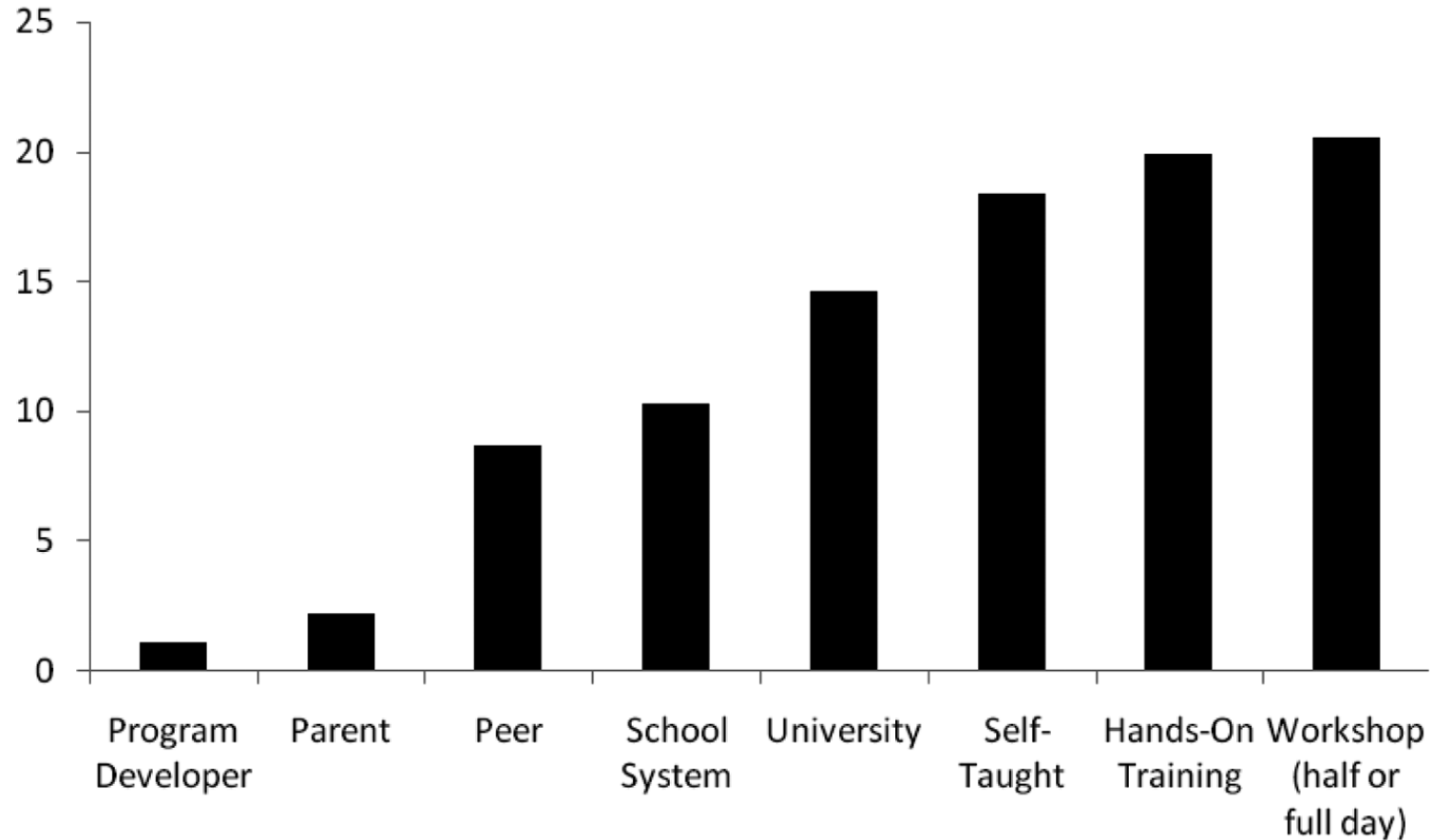


# How are teachers trained to provide those services?

- Morrier et al. (2011)
  - Online survey of teachers across Georgia
  - 185 teachers responded
    - 219 children with ASD
  - Represented 57% of GA school districts



# Sources of Training



**Figure 1.** Reported training received across all categories and methods of strategies by teachers for strategies used with students with autism spectrum disorders



# Training for Strategy Use

**Table 4.** Reported Training for Use of Teaching Strategies

	Interpersonal relationship (%)	Skill based (%)	Cognitive (%)	Physiological, biological, neurological (%)	Other (%)
Teacher prep program	9.7	13.0	23.3	11.5	6.3
Workshop	12.9	22.2	37.2	19.2	6.3
Program developer	0.0	3.7	0.0	0.0	0.0
School in-service	6.5	14.9	7.0	11.5	12.6
Peer teacher	0.0	11.1	2.3	15.4	31.3
Hands-on	32.3	16.7	16.3	19.2	18.8
Self-taught	35.5	18.5	11.6	15.4	25.0
Parent	3.2	0.0	2.3	7.7	0.0



# Current State ASD- Related Projects



*Dr. John D. Barge, State School Superintendent*  
*"Making Education Work for All Georgians"*





# Georgia Department of Public Health

- **Autism Navigator for Early Intervention Providers** (Marcus Autism Center)
  - Identify “red flags” for ASD to improve skill sets, knowledge base, and capacity of EI for increased early referral
- **Positive Behavior and Visual Supports** (Georgia State University)
  - Help families address challenging behaviors and increase communication skills
- **Georgia Autism Assessment Collaborative** (Emory Autism Center)
  - Build capacity for licensed professionals (e.g., psychologists) to provide comprehensive diagnostic assessment for ASD



# Georgia Department of Education



- **Autism Plan for Georgia partner**
- **Georgia Autism Technical Assistance Program**
  - 5 locations across the state holding sessions geared toward teachers and therapists serving students with ASD and ID
    - Topics covered: Functional Communication, Structured Teaching, Assistive Technology, Functional Behavior Assessments
- **Autism Early Intervention Project**
  - 5 year State Personnel Development Grant; Inter-agency collaboration with Head Start, Ga Pre-K, Babies Can't Wait, community preschools
  - Training in 3-5 regions
    - Years 1-2 Incidental Teaching (Emory Autism Center)
    - Years 3-4 Social Communication/Emotional Regulation (Marcus Autism Center)
    - Parent training in each region



# Ga DOE continued

- **ANCA project** (Marcus Autism Center)
  - Trained teachers and school psychologists on how to administer, interpret and use results of the Assessment of Basic Language and Learning to provide appropriate services to students with autism and intellectual disabilities.
  - Research and training in data collection, FBAs, BIPs, and working with children with severe behaviors.



# Implications/Conclusions

- Students with ASD not receiving best practices in school
  - Best practice guidelines needed
    - Top 5 used not scientifically-based
    - Almost 40% not rated by Simpson (2004)/Simpson et al. (2005)
- Teachers are not trained to implement scientifically-based practices
  - NCLB and IDEA mandates
- State agencies focusing on young children are increasing funding to improve services
  - Increasing competence in 0-5 providers





# Thank you!

- For more information:

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