



The Efficacy of Early Intensive Behavioral Intervention (EIBI) for Children with Autism

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Autism

- Developmental disorder
- Impairments in communication and social interaction, and repetitive, stereotyped patterns of behavior
- Diagnosis made on basis of behaviors observed prior to age 3
- Affects 1 in 166 children
- Affects males more than females (3:1 ratio)
- Spectrum disorder
- No known cause, primarily genetic
- Long list of possible interventions



The Need for EIBI for Autism

- Behavior problems
- Non-responsiveness
 - low attention, high distractibility
 - low intrinsic motivation
 - alternative, repetitive behaviors
- Lack of observational learning and imitation
- Deficits in receptive language
- Limited generalization of skills
- Difficulty learning from natural environment
- Require reduced, structured, 1:1 teaching environment with high reinforcement
- Larger and more permanent gains are made when intervention is begun at an early age

Early, Intensive Behavioral Intervention

- Based on principles of Applied Behavior Analysis
- Data based and scientifically supported
- Typically started prior to the age of 6
- 30-40 hours per week of 1:1 intervention provided by “aides” for 2 or more years
- Supervised by consultant, psychologist
- Treatment initially provided in the home and generalized to school and community
- Treatment is comprehensive in nature and individualized to the child
- Ultimate goal is integration into school

Early, Intensive Behavioral Intervention

General Tenets:

- Teach skills first in reduced setting
- Break skills down to simplest components and then teach hierarchically
- Teach to mastery/consistency/fluency
- Employ active, not passive, learning
- Give consistent feedback
- Use rewards to motivate, build new skills
- Provide prompts to maximize success, fade
- Collect data to document progress
- Assume responsibility for acquisition

Lovaas (1987)

- Three groups of subjects (CA < 4 at intake)
- Intensive treatment group (n=19) received 40 hours per week for 2 or more years
- Control group 1 (n=19) received 10 hours per week
- Control group 2 (n=21) received other intervention in community
- No significant differences between groups on pre-treatment variables

Lovaas (1987) Results

	Recovered	Aphasic	Autistic
Experimental (83.3)	9	8	2
Control 1 (52.2)	0	8	11
Control 2 (57.5)	1	10	10

- 47% of experimental group achieved normal intellectual and educational functioning with normal-range IQ scores and successful regular first grade placement by age 7
- Only 2% of control subjects achieved best outcome

McEachin, Smith, & Lovaas (1993)

- Follow-up of 1987 study at age 11.5
- Experimental group preserved its gains over control group 1
- 8 of 9 best outcome subjects were indistinguishable from typical peers on IQ, adaptive behavior scale, personality inventory and school placement

Critiques of Lovaas' Research

- "There was not true random assignment of subjects to groups"
- "There were placebo effects"
- "Subjects were not truly autistic"
- "Subjects continue to present autistic behaviors, despite IQ and placement"
- No independent replication

Smith, Groen, and Wynn (2000)

- Intensive group (7 with autism, 8 with PDD-NOS) received 24.5 hours per week of 1:1 intervention for 2-3 years
- Parent training group (7 with autism, 6 with PDD-NOS) received 5 hours per week of parent training for 3-9 months
- Groups were randomly assigned and similar at intake
- Follow-up conducted at age 7

Smith, Groen, and Wynn (2000)

- Intensive group performed better on IQ, visual-spatial skills, language, academics; had less restrictive school placements
- Groups did not differ in adaptive behavior or behavior problems
- IQ gains were less than previous study (16 vs. 31 points)
- Only 2 of 15 intensive subjects achieved “best outcome”
- Children with PDD in intensive group gained more than those with autism

Eikeseth, Smith, Jahr, and Eldevik (2002)

- Evaluated 1-year of intensive treatment for 4-7 year old children
- Assigned to behavioral (n=13) or eclectic treatment (n=12) groups
- Both groups received 28.5 hours of treatment per week at school
- Children in behavioral group made significantly larger gains on standardized tests of IQ, language, and adaptive behavior
- 7 of 13 had IQ's in average range (+17 points), only 2 of 12 in eclectic treatment group (+2)
- Specific aspects of behavioral treatment accounted for favorable outcomes

Wisconsin Early Autism Project

- Clinic directed group (n=12) received 40 hours per week of 1:1 intervention
- Parent directed group (n=12) received 6 hours per month of supervision and consultation
- Alternate treatment group (public school)
- After one year of treatment 8 of 24 clients achieved “best outcome”
- Best outcome showed 45 point IQ increase
- Best outcome subjects gained 21 months in receptive language, 17 months expressive

Wisconsin Early Autism Project

- At 1 year
 - Overall, a 21 point gain in IQ; moderate relation between IQ, outcome ($r=.52$)
 - Percentage of children able to speak in phrases increased from 8% to 71%
 - Parent directed group made significant gains
- At 3-4 years
 - Close to 50% acquired near normal functioning
 - 92% acquired some language
 - Control group in special ed showed no gains in IQ and adaptive behavior



UCLA MultiSite Replication Project

- Project funded through NIMH
- Currently 12-15 replication sites in US and across the world
- Site directors attend 9 month internship
- Two more studies being published in the next year
- Entire project data likely published in the next 2-3 years
- In general, sites are finding 35-40% of children achieving best outcome