

Christina Lanzone

Author, Year, Title, Journal	Study Purpose and Design	Subjects	Intervention	Results	Author Conclusion	Notes
Connolly et al. 1993 "A Longitudinal Study of Children with Down Syndrome Who Experienced Early Intervention Programming"	To compare long-term motor, cognitive, and adaptive functioning of children with DS who had EI with those who did not Cohort	EI group: 10 of original 40 who received EI from UT CDC and continued in proper edu settings; age 14-18 Control group: constructed group, same age who did not have EI	Administered BOTMP, Stanford-Binet Intelligence Scale, and Vineland Social Maturity Scale in two four hour sessions	EI group: mean gross motor composite age of 6.05 years and fine motor composite age of 5.64 years; EI group showed sig. higher IQ and SQ scores	EI children's gross and fine motor skills continued to improve and EI group had higher intellectual and adaptive functional levels	Did not compare motor skills between groups; possible control group selection bias; results due to EI or subsequent proper educational settings?
Hines & Bennett 1996 "Effectiveness of Early Intervention for Children with Down Syndrome" <i>Mental Retardation and Development</i>	To review studies that evaluated the effectiveness of EI for children with DS Review article	They did not discuss their selection process for studies to be reviewed	Connolly et al. 1984 EI program at CDC until age 3, appropriate edu services after; Sharav & Shlomo 1986 home-based age 4-6 wks of 1 hr tx and parent edu, 18mo-2yrs in kindergarten setting 4 mornings/wk, 3 years 6 mornings/wk and individual PT; Iriwn 1989 center-based EI; Connolly et al. 1993 EI program at CDC until 3 and appropriate edu services after	EI: can prevent decline in intellectual functioning, statistical difference in attainment of PT goals, higher scores on measures of intellectual and adaptive functioning, better school performance, attain higher developmental scores; EI positive effects diminished if services not maintained	Overall positive developmental changes seen, particularly in terms of independence, community functioning, and quality of life; children and their families benefit from EI	Provided little information about study selection and study content; studies had small sample sizes and used outcome measures that were often not responsive to changes in children with DS
Haley 1986 "Postural Reactions in Infants with Down Syndrome: Relationship to Motor Milestone Development and Age" <i>Physical Therapy</i>	To look at relationship between postural reactions, chronological age, and motor skill acquisition in children with DS and non-handicapped children Cohort	DS group: 20 infants age 2-24 mo recruited from area EI programs Non-DS group: 40 infants age 2 to 10 mo from local community college parent-infant classes	Administered outcome measures in one testing session; used Bayley Motor Scale and modified version of Movement Analysis for Infants	Infants without DS had stronger relationship between age and postural reactions; relationship between postural reactions and Bayley scores for both infant groups were high and positive and correlation for DS group was significantly greater than for the non-DS group	Relationship between presence of postural reactions and acquisition of gross motor skills is similar in infants with and without DS and delays in postural reactions and motor milestone achievements are seen in conjunction in infants with DS	Small sample size of infants with DS
Connolly et al. 1984 "Evaluation of Children with Down Syndrome Who Participated in an Early Intervention: Second Follow-up Study" <i>Physical Therapy</i>	To compare long-term motor, cognitive, and adaptive functioning of children with DS who had EI and those who did not Cohort	EI group: 15 children with DS who received EI from UT CDC and continued in proper edu settings; age 7-10 Control group: 36 children with DS from cross-sectional study of intellectual and adaptive functioning who were in same age range but had not had EI	Administered BOTMP (or Gesell Schedule of Motor Development for 3 children who were untestable on the BOTMP because of their low mental ages), Stanford-Binet Intelligence Scale, and Vineland Social Maturity Scale in two four hour sessions	EI group: mean gross motor composite age of 4.7 years and fine motor composite age of 4.9 years; mean IQ for EI group was 16 points higher; mean SQ for EI group was 11.5 points higher; although EI group 4.4 years older than previous study, mean IQ and SQ did not show major drop that would be expected with their increased age	Children from their EI program are functioning better than expected for children with DS ages 7-10 in terms of motor, cognitive, and adaptive skills and they are performing better than similar DS children who had not had EI.	Did not compare motor skills between groups; results due to EI or subsequent proper educational settings?
Mahoney et al. 2001 "The Effects of Early Motor Intervention on Children with Down Syndrome or Cerebral Palsy: A Field Study" <i>Journal of Developmental and Behavioral Pediatrics</i>	To look at effects of two different motor intervention approaches on children with DS and CP Cohort	Followed 50 children with CP or DS who were treated at EI programs that were either NDT or DevS based for one year; no control group	Performed GMFCS at beginning of study and Bayley Scale of Mental Development, Peabody Developmental Scales, Toddler Infant Motor Evaluation at pre- and post-study; services provided by same PTs using their normal methods on a continuous basis at all 9 sites; all providers kept an intervention service log and at 6 month point, mothers completed a mailed Family Focused Intervention Scale	On average, children maintained same rate of gross motor skill growth that they had at beginning of study; DS and CP children made similar gains; NDT did not improve quality of movement more; number of sessions did contribute to rate of motor development; differences in specialized training did not sig. affect rate of gross motor skill growth	Overall, EI services did not improve rate of motor skill development beyond that of normal maturation. No significant differences between treatment approaches. Parents seemed to prefer DevS therapy approach.	Small sample size; lack of assessment during year-long intervention period; lack of control group

Hanson 2003 “Twenty-Five Years After Early Intervention: A Follow-up of Children With Down Syndrome and Their Families”	To interview children with DS and their families who had participated in same EI program between 1974 and 1977 Longitudinal cohort with qualitative aspects	12 of original 15 children and families who participated in a home-based EI program; now ages 24-26 years old	Program director of original EI program performed one interview with each child and parents in their home using a developed semi-structured interview protocol	All parents listed EI services as one of most important services they received and highlighted several important aspects: fostered feeling of efficacy and competence, taught them structured teaching approach which they continued to use throughout their child’s life, parent-to-parent support, provided hope at a crucial time	EI services were crucial for these families and provided parents with the skills needed to raise children with DS and contributed to their adult success	Parents could not be candid because speaking with former EI program director? Small sample size; lack of outcome measures; results only valid for EI services in that limited period (1974-77), especially since EI services have changed drastically since then
Eigsti et al. 2010 “A Longitudinal Study of Outcome Measures for Children Receiving Early Intervention Services” <i>Pediatric Physical Therapy</i>	To compare the capacity of both scaled and standard scores on the PEDI Functional Skills Scales and standard scores on the MSEL to detect change in 2 groups of children who received EI services	Used a pre-established cohort of 70 infants receiving EI services (from Project ENRICH) who were divided into 2 groups based upon the presence of motor delays	Outcome measures administered 3x for each child: at an average age of 18 months, 31 months, and 53 months	Standard scores on PEDI and MSEL sig. diff. between groups across all trials; diff. in mean change scores only stat. sig. for standard scores on PEDI Functional Skills Social Function Scale and MSEL Expressive and Receptive Language Scales were sig. diff. between trials 1 and 3	PEDI scaled scores were most effective for assessing functional change in children with DS receiving EI services	Small sample that was not representative of the overall population of children receiving EI services; looked at ability to detect change but not if this change was clinically meaningful or detected by parents
Piper & Pless 1980 “Early Intervention for Infants with Down Syndrome: A Controlled Trial” <i>Pediatrics</i>	To evaluate the efficacy of an early intervention program for infants with DS compared with a non-intervention control group RCT	Randomly assigned 37 infants with DS under 24 months of age to EI or non-EI control group; did not provide any information about recruitment or family background	Center-based EI program of biweekly therapy sessions; each session lasted 1 hr and was designed to encourage child’s motor skill development; provided written HEP for parents; control group had no intervention; provided very little information about intervention or written HEP	No statistically significant differences were found between the two groups	Found no statistical evidence to support the idea that EI services were efficacious for infants with DS	Extremely limited duration of intervention (only 6 months) and did not look at results of intervention further out

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