

ESSEA Work Group 4:

Testing early intervention approaches through rigorous controlled trials. Summary of completed studies (published 2002 on)

Authors, Design	Sample	Primary outcome	Type	Baseline-follow-up
Green et al (2010) UK. RCT	152, autism, 24-59 months.	ADOS social communication algorithm (adapted).	~40 hours. Reciprocity intervention.	13 months.
Warreyn & Roeyers (in press, 2013). Belgium. RCT	36, 4-7 yrs	Play assessment of imitation & joint attention.	~12 hours. Naturalistic & behavioural.	4-5 months.
McConachie et al (2005) UK. Controlled	52, ASD, 28-60 months	MCDI; parent interaction style	20 hours. Reciprocity intervention.	7 months.
Aldred et al (2004) UK. RCT	28, autism, 24-71 months.	ADOS, MCDI, parent-child interaction.	~18 hours. Social communication intervention	12 months.
Oosterling et al. (2010) Netherlands. RCT	75, ASD, mean 34.4 months	MCDI	~50 hours. Social-pragmatic and developmental	15 months
Drew et al. (2002) UK. RCT	24, autism, mean 22 months	Language/communication development (MCDI, ADI-R)	~24 hours. Social-pragmatic and developmental	12 months
Fava et al (2011) Italy. Controlled	22, autism or PDD- NOS, 26 to 81 months.	ADOS; Griffiths; MCDI; VABS; CBCL; PSI.	~350 hours, EIBI	6 months
Zachor & Ben-Itzhak (2010) Israel. Controlled	78, autism, 15-35 months.	ADOS cut-off; MSEL; VABS.	~1000 hours. EIBI	12 months.
Remington et al (2007) UK. Controlled	44, autism, 30-42 months.	IQ, Language, VABS etc	~2500 hours. EIBI	12 and 24 months.
Magiati, Charman, Howlin (2007) UK. Controlled	44, autism/ASD, 23-54 months.	IQ, VABS; BPVS; Expressive one-word PVT-revised; Symbolic Play Test II; ADI-R.	mean 3415 hours EIBI	23-27 months.

Hayward et al (2009) UK. Controlled	44, autism, 24-42 months.	IQ, Language, VABS.	~1800 hours. EIBI	12 months.
Eldevik et al (2006) Norway. Controlled	28, autism + intellectual disability, 21-69 mos	IQ; RDLS; VABS	~1500 hours. EIBI	24 months
Jónsdóttir et al. (unpublished) Iceland, Norway. Controlled	28, 24-42 months.	CARS, IQ, Language, VABS, etc	~1800 hours. EIBI	12 months (also at 6-7 years of age).
Peters-Scheffer et al (2010) Netherlands. Controlled	34, ASD + intellectual disability; mean 53 mos	IQ, VABS, PDD-MRS, CBCL	~250 hours. EIBI	8 months
Rogé, Wittemeyer, Mantoulan. (unpublished) France. Controlled.	27, autism, 30-85 mos. Experimental group = 16; control group = 11	ADOS, VABS, Griffiths, PEP	~1000 (15-20 hrs per wk) 1:1 EIBI and structured teaching	12 and 24 months
Muratori et al (2011) Italy. Clinical study	70, ASD, 24-48 months	ADOS severity index, DQ, VABS, CBCL, PSI, SCQ	~250 hours. Developmental/behavioural	6 months (and 30 months planned)
Golan et al (2010) UK. RCT	38, high functioning ASD, 4-7 years.	Emotional vocabulary, situation-facial expression matching.	~6 hours. Animation, to enhance emotion comprehension.	1 month
Kaale, Smith & Sponheim (2011) Norway. RCT Kaale et al., submitted	61, autistic disorder, 29-60 months	MSEL, ESCS, adult-child play	~25 hours. Joint attention training (Kasari)	2 months 6 and 12 months
McConkey et al (2010) Northern Ireland. Controlled.	61, ASD (35 intervention group, 26 control), mean 2.8 years	PEP-R, GARS, VABS, QRS-F, GHQ	~ 25 hours. Home-based communication intervention	9-14 months
Salt et al (2002) UK. Controlled.	17, autism (12 experimental group, 5 - control), mean: 42 mos	VABS, PVCS, MCDI, Symbolic Play Test – 2 nd Edition, ESCS, PSI	~176 hours. Social communication and interaction (the Scottish Centre for Autism programme)	11 months
Heimann et al (2006). Sweden. RCT	20, ASD (non-verbal)	Social behaviours coded from video, PEP-R imitation scale	2 x 3 minutes	immediate and after 20-30 minutes

Eikeseth et al (2002). Norway. Controlled	25, autism, 4-7 years (treatment n=13, control n=12)	WPPSI-R or WISC-R, Merrill- Palmer Scale, RDLS, VABS	EIBI versus Eclectic. both groups 28-29 hours/week	1 year
Eikeseth et al 2007 Norway. Controlled	25, autism, 4-7 years (treatment n=13, control n=12)	IQ (?), VABS, CBCL	EIBI versus Eclectic. both groups 28-29 hours/week	32 mo follow up of 2002 sample
Eldevik et al 2012 Norway. Controlled	43, ASD. treatment n=31, age 42mo; comparison n=12, age 46mo	BSID II or 3, VABS,	EIBI versus TAU	24-25 months
Peters-Scheffer et al 2013 Netherlands. Controlled	40, ASD (20-20). mean 62,5 months	VABS, CARS, CBCL, BFRS-R, PSI, MSEL, ADOS, ESCS	4-10h/week low-intensity BT, 2 years versus TAU	12 and 24 months
Reed et al 2013 UK. Controlled	32 ASD (16 BEAM mean 43mo -16 Portage mean 40mo)	Baseline: Leiter-R, PPVT, VABS. Pre-post: ABC, DBC, QRS, PCRI	BEAM 6.4h/week versus Portage 8.5h/week	10 months
Poslawsky et al, in review, Netherlands. RCT	78 ASD (16-61 mo, mean = 42.9)	Baseline: ADOS-G, , MSEL, Reynell, Schlichting, NCDI, ABC, SCL-90 Outcome: EAS-parental scales, EAS-child scales, PEQ, PDH, CSQ-8, ESCS , Play	5 sessions: 60-90 minutes, fortnightly for three months.	4 and 7 months

Abbreviations

<p>ADI-R: Autism Diagnostic Interview - Revised ADOS: Autism Diagnostic Observation Schedule ASD: Autism spectrum disorder BPVS: British Picture Vocabulary Scale BSID-II: Bayley Scales of Infant Development Second Edition CARS: Childhood Autism Rating Scale CBCL: Child Behavior Checklist DD: Developmental Disability DQ: Developmental quotient EIBI: Early intensive behavioural intervention ESCS: Early Social Communication Scale Griffiths Scales of Mental Development GARS: Gilliam Autism Rating Scale GHQ: General Health Questionnaire</p>	<p>MCDI: MacArthur Communicative Development Inventory (Words & Gestures) MSEL: Mullen Early Learning Scales PDD-MRS: Pervasive Dev. Disorder in Mentally Retarded Persons PEP: Psycho-Educational Profile PEP-R: Psycho-Educational Profile-Revised PSI: Parenting Stress Index PVCS: Pre-Verbal Communication Schedule PVT: Picture Vocabulary Test RCT: Randomised controlled trial RDLS: Reynell Developmental Language Scales QRS-F: Questionnaire on Resources and Stress UK: United Kingdom VABS: Vineland Adaptive Behavior Scales</p>
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References

- Aldred, C, Green, J and Adams, C (2004) A new social communication intervention for children with autism: pilot randomized controlled treatment study suggesting effectiveness. *Journal of Child Psychology and Psychiatry*, 45:8, 1420-1430.
- Ben-Itzhak, E, Lahat, E, Burgin, R and Zachor, A, D (2008). Cognitive, behavioral and intervention outcome in young children with autism. *Research in Developmental Disabilities*, 29, 447–458.
- Drew, A, Baird, G, Baron-Cohen, S, Cox, A, Slonims, V, Wheelwright, S, Swettenham, J, Berry, B and Charman, T (2002) A pilot randomized control trial of a parent training intervention for pre-school children with autism: Preliminary findings and methodological challenges. *European Child & Adolescent Psychiatry*, 11, 266-272.
- Eikeseth, S., Smith, T., Jahr, E., & Eldevik, S. (2002). Intensive behavioral treatment at school for 4- to 7- year old children with autism. A 1-year comparison controlled study. *Behavior Modification*, 26, 49-68.
- Eikeseth, S., Smith, T., Jahr, E., & Eldevik, S. (2007). Outcome for children with autism who began intensive behavioral treatment between ages 4 and 7: a comparison controlled study. *Behavior Modification*, 31, 264-278.
- Eldevik, S, Eikeseth, S, Jahr, E and Smith, T (2006) Effects of low-intensity behavioral treatment for children with autism and mental retardation. *Journal of Autism and Developmental Disorders*, 36, 211-224.
- Eldevik, S., Hastings, R.P., Jahr, E., & Hughes, J.C. (2012). Outcomes of behavioral intervention for children with autism in mainstream pre-school settings. *Journal of Autism and Developmental Disorders*, 42, 210-20.
- Fava, L, Strauss, K, Valeri, G, D'Elia, L, Arima, S & Vicari, S (2011) The effectiveness of a cross-setting complementary staff- and parent-mediated early intensive behavioural intervention for young children with ASD. *Research in Autism Spectrum Disorders*, 5, 1479-1492.
- Golan, O, Ashwin, E, Granader, Y, McClintock, S, Day, K, Leggett, V and Baron-Cohen, S (2010) Enhancing emotion recognition in children with Autism Spectrum Conditions: An intervention using animated vehicles with real emotional faces. *Journal of Autism and Developmental Disorders*, 40, 269-279.
- Green, J, Charman, T, McConachie, H, Aldred, C, Slonims, V, Howlin, P, Le Couteur, A, Leadbitter, K, Hudry, K, Byford, S, Barrett, B, Temple, K, MacDonald, W, Pickles, A and the PACT Consortium. (2010) Parent-mediated communication-focused treatment for preschool children with autism (MRC PACT): a randomized controlled trial. *The Lancet*, 375, 2152-2160.
- Hayward, D, Eikeseth, S, Gale, C and Morgan, S (2009) Assessing progress during treatment for young children with autism receiving intensive behavioural interventions. *Autism*, 13, 613-633.
- Jonsdottir, SL, & Eikeseth, S (unpublished) Intensive behavioural intervention of children with autism in a pre-school setting in Iceland and Norway (contact: sigridurloa@greining.is)

- Kaale, A, Smith, L & Sponheim, E (2011) A randomized controlled trial of preschool-based joint attention intervention for children with autism. *Journal of Child Psychology and Psychiatry*, doi:10.1111/j.1469-7610.2011.02450.x
- Magiati, I, Charman, T & Howlin, P (2007) A two-year prospective follow-up study of community-based early intensive behavioural intervention and specialist nursery provision for children with autism spectrum disorders. *Journal of Child Psychology and Psychiatry*, 48, 803-812.
- McConachie, H, Randle, V, Hammal, D and Le Couteur, A (2005) A controlled trial of a training programme for parents of children with suspected autism spectrum disorder. *The Journal of Pediatrics*, 147, 335-340.
- McConkey, R, Truesdale-Kennedy, M, Crawford, H, McGreevy, E, Reavey, M and Cassidy, A (2010) Preschoolers with autism spectrum disorders: evaluating the impact of a home-based intervention to promote their communication. *Early Child Development and Care*, 180(3), 299-315.
- Muratori (contact filippo.muratori@inpe.unipi.it)
- Oosterling, I, Visser, J, Swinkels, S, Rommelse, N, Donders, R, Woudenberg, T, Roos, S, Jan van der Gaag, R and Buitelaar, J (2010) Randomized controlled trial of the Focus parent training for toddlers with autism: 1-year outcome. *Journal of Autism and Developmental Disorders*, 40, 1447-1458.
- Peters-Scheffer, N, Didden, R, Mulders, M and Korzilius, H (2010) Low intensity behavioural treatment supplementing preschool services for young children with autism spectrum disorders and severe to mild intellectual disability. *Research in Developmental Disabilities*, 31, 1678-1684.
- Remington, B, Hastings, RP, Kovshoff, H, degli Espinosa, F, Jahr, E, Brown, T, Alford, P, Lemaic, M and ward, N (2007) Early intensive behavioral intervention: outcomes for children with autism and their parents after two years. *American Journal on Mental Retardation*, 112:6, 418-438.
- Roge, B., Wittemeyer, K., Mantoulan, C. (contact roge@univ-tlse2.fr)
- Salt, J, Shemilt, J, Sellars, V, Boyd, S, Coulson, T and McCool, S (2002) The Scottish centre for autism preschool treatment program II: The results of a controlled treatment outcome study. *Autism*, 6, 33-46.
- Warreyn & Roeyers (contact petra.warreyn@ugent.be)
- Zachor, D. A and Itzhak, E. B (2010) Treatment approach, autism severity and intervention outcomes in young children. *Research in Autism Spectrum Disorders*, 4, 425-432.