

Lovaas, O.I. (1987). "Behavioral treatment and normal educational and intellectual functioning in young autistic children". *Journal of Consulting and Clinical Psychology*. 55. 3-9.

- Three groups of children – 1 experimental group, 2 control groups
- Experimental group exposed to forty hours intensive behavioural intervention at home for two years
- Control group 1 exposed to 10 hours per week intensive behavioural intervention
- Control group 2 received “eclectic” intervention

Standardised measures taken at the beginning of each child's participation in the study

- e.g. IQ, Vineland Adaptive Behaviour Scale, Standardised language tests
- The same tests were administered at the end of two years, and their educational placement was noted (what kind of classrooms they ended up in)
- Tests were administered by testers “blind” to the group a child had been allocated to
- They were independent of the experiment and of the treatment groups.
- Results .....

## Educational Placement and Mean/Range of IQ at follow up (2yrs)

<b>Group</b>	<b>Mainstream</b>	<b>Aphasic</b>	<b>Autistic</b>
<b>Experimental</b>			
Number	9	8	2
Mean IQ	107	70	30
Range	94-120	56-95	Same score each
<b>Control 1</b>			
Number	0	8	11
Mean IQ	-	74	36
Range	-	30-120	20-73
<b>Control 2</b>			
Number	1	10	10
Mean IQ	99	67	44
Range	-	49-81	35-54

<b>Group</b>	<b>Mainstream</b>	<b>Aphasic</b>	<b>Autistic</b>
Experimental	9/19	8/19	2/19
Control 1	0/19	8/19	11/19
Control 2	1/21	10/21	10/21

## Educational Placement at follow up

<b>Group</b>	<b>Mainstream</b>	<b>Aphasic</b>	<b>Autistic</b>
Experimental	9/19 (47%)	8/19 (42%)	2/19(11%)
Combined Control	1/40 (3%)	18/40 (45%)	21/40 (53%)

McEachin, J. J.,  
Smith, T., &  
Lovaas, O. I.  
(1993).  
USA

- Long-term follow up of outcomes reported in Lovaas (1987).
- Independent assessors found the experimental group preserved gains over control group at age 11.5 years.
- 9 experimental children who achieved best outcomes (mainstream educational placement) in Lovaas (1987) extensively evaluated.
- 8 of those children found to be **indistinguishable from typical children** on standardised tests of intelligence and adaptive behaviour.

Smith, T., Groen, A. D., & Wynn, J. W. (2000).  
USA

- Randomized trial comparing ABA with parent-training.
- Young children with pervasive developmental disorder randomly assigned to ABA (15 children) or parent training (13 children).
- ABA group averaged 24.52 hours/week individual treatment for one year, gradually reducing hours over next 1 to 2 years.
- Parent training group received 3 to 9 months parent training.
- Groups appeared similar at intake on all measures;
- At follow up, **ABA group outperformed parent training group on measures of intelligence, visuo-spatial skills, language, and academics**
- (Adapted from the Abstract, p.269).

Eikeseth, S., Smith, T., Jahr, E., & Eldevik, S. (2002). Norway

- Compared intensive ABA with intensive eclectic treatment.
- At 1-year evaluation, 13 children who received intensive ABA made significantly larger improvements than comparison group of 12 children who received intensive eclectic intervention.

On average, intensive ABA group gained

- 17 points in IQ,
- 13 points in language comprehension,
- 23 points in expressive language, and
- 11 points in adaptive behavior.

By comparison, intensive eclectic group obtained average changes of

- +4 points in IQ,
- -1 points in language comprehension,
- -2 points in expressive language, and
- 0 points for adaptive behaviour

(p.63).



Howard, J. S., Sparkman, C. R., Cohen, H. G., Green, G., & Stanislaw, H. (2005). USA

This study compared the effects of three kinds of educational programmes on cognitive, language and adaptive skills at intake and after 14 months.

The three kinds of programmes were:

- 1) Intensive ABA, 29 children;
- 2) Intensive “eclectic” programmes 16 children; and
- 3) Non-intensive “eclectic” programmes, 16 children.

- No significant difference was found between the groups on standardised tests administered by independent examiners at intake.
- After 14 months, independent examiners again administered standardised tests to all children.

Howard, J. S., Sparkman, C. R., Cohen, H. G., Green, G., & Stanislaw, H. (2005). USA

**After 14 months**

- The ABA group had higher mean standard scores in all skill domains.
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- The differences were statistically significant in all domains (except motor skills).
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- Learning rates were substantially higher than in other two groups (they had become faster learners).

- Children in the intensive and non-intensive "eclectic" groups had lower mean standard scores in all skill domains.
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- There were no statistically significant differences between the intensive and the non-intensive groups.
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- (the level of intensity of "eclectic" programmes does not affect outcomes).

Sallows, G.,  
Graupner, T. D.  
(2005).  
USA

Replication of Lovaas (1987) with 24 children.

- Measured cognitive, language, social and academic skills after four years:

- “48% [11 children] of all children showed rapid learning, achieved average post-treatment scores, and at age 7, were succeeding in regular education classrooms” (from the Abstract, p.417).

- **“At age 7, these rapid learners were succeeding in regular first or second grade classes, demonstrated generally average academic abilities, spoke fluently, and had peers with whom they played regularly” (p.433).**

Eikeseth, S., Smith, T., Jahr, E., & Eldevik, S. (2007). Norway

Followed up children from 2002 study comparing ABA with eclectic treatment. ABA (13 children) eclectic (12 children) Average age at start 5.5 years. Outcomes compared at average age 8 years 2 months.

ABA treated children showed:

- larger increases in scores,
  - less severe aberrant behaviour and
  - fewer social problems than eclectic group.
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- **Seven of 13 children** in the ABA group who scored within the range of mental retardation at intake scored within average range ( $\geq 85$ ) on both IQ and verbal IQ at follow-up
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  - **Two of 12 children** in the eclectic treatment group scored within average range at follow up.
  - (p.273 -276).

Eikeseth, S., Smith, T., Jahr, E., & Eldevik, S. (2007).  
Norway

- ABA treatment group **gained** average:
  - 25 IQ points,
  - 12 points in adaptive functioning (measured by the Vineland Adaptive Behavior Scales),
  - 20 points in Vineland Communication,
  - 9 points in Vineland Daily Living Skills, and
  - 12 points in Vineland Socialization Skills.
- Eclectic treatment group **obtained** average **change** of
  - +7 points in IQ,
  - -10 points in Vineland Adaptive Functioning,
  - -7 points in Vineland Communication,
  - -6 points in Vineland Daily Living Skills, and
  - -12 points on Vineland Socialization.

Zachor, D. A., Ben-Itzhak, E., Rabinovich, A-L., Lahat, E. (2007). Israel

This study compared two approaches, Eclectic-Developmental (19 children) and ABA (20 children).

Children in both groups did not significantly differ in autism severity, cognitive abilities and socio-economic background before intervention. Standardised tests administered at intake and after one year of interventions.

Findings:

- The ABA group showed significantly greater improvements than the Eclectic Developmental group at post-intervention.
- Pre to post intervention differences in language and communication domains was significant only for the ABA group.
- Both groups showed significant improvements in reciprocal social interaction. The effect size was greater for ABA group.

Zachor, D. A., Ben-Itzhak, E., Rabinovich, A-L., Lahat, E. (2007). Israel

Of particular note in this study are the changes in diagnosis following one year of intervention.

The majority of children in the study were diagnosed with autism, with only two children, one in each group, diagnosed with autistic spectrum disorder (ASD, less severe condition).

These researchers had children assessed against the diagnostic criteria for autism and ASD after one year. This is what they found:

Diagnosis: ABA group at intake

- 19 Autism
- 1 ASD

Diagnosis: ABA group after one year

- 11 Autism
- 5 ASD
- 4 did not meet criteria for either Autism or ASD

Diagnosis: Eclectic group at intake

- 18 Autism
- 1 ASD

Diagnosis: Eclectic group after one year

- 15 Autism
- 4 ASD