



## Comprehensive early intervention involving parents benefits blind children carried for full term

**CITATION:** Beelman, A., & Brambring, M. (1998). Implementation and effectiveness of a home-based early intervention program for blind infants and preschoolers. *Research in developmental disabilities, 19*(3), 225–244.

**LEVEL OF EVIDENCE:** IIB2a

### RESEARCH OBJECTIVE/QUESTION

To determine the effectiveness of a home-based early intervention program for blind infants and preschoolers.

### DESIGN

	RCT		Single Case		Case Control
	Cohort		Before-After	X	Cross Sectional

Combined longitudinal and cross-sectional nonequivalent control-group design.

### SAMPLING PROCEDURE

	Random		Consecutive
	Controlled	X	Convenience

Families were contacted through general and blind-specific early intervention centers in Germany.

### SAMPLE

N=10 families with a congenitally blind child control group=40 families	M age treatment group=12 months; range=9.5–19 months control Group=NR; range=12–36 months	Male treatment group=5 control group=24	Ethnicity=German	Female treatment group=5 control group=16
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NR=Not reported

## **PARTICIPANT CHARACTERISTICS**

Children who were completely blind and had no other impairments.

## **MEDICAL DIAGNOSIS/CLINICAL DISORDER**

Blindness; most children had retinopathy of prematurity (ROP)

## **OT TREATMENT DIAGNOSIS**

N/A

## **OUTCOMES**

Outcome area: development, including neuromotor, cognition, language, socioemotional, orientation and mobility, fine motor, and daily living

<b>Measures</b>	<b>Reliability</b>	<b>Validity</b>
Developmental Test for Blind Infants and Preschoolers (BEB-KV)	Comprehensive assessment	Not yet available

## **Outcome—OT terminology**

Performance components and performance areas

## **Outcome—ICIDH-2 terminology**

Activity and impairment

## **INTERVENTION**

### **Description**

The treatment group received home visits every 14 days. A developmental program for each individual session based on developmental assessment data. Particular attention was paid to tactile and auditory object perception, spatial orientation and mobility, and daily living skills. The use of play materials for blind children was emphasized. Parents were given guidance and training on parent-child interaction and intervention activities. In addition, the parents were offered problem-oriented counseling from a family-oriented perspective.

ICIDH: emphasis on activity; UT: performance area

### **Who delivered**

- Team consisted of 3 psychologists
- One special educator
- One interventionist had orientation and mobility training

### **Setting**

Home

### **Frequency**

Home visits occurred every 14 days (average of 33.4 sessions). Average length of a session was 182 minutes.

**Duration**

Mean=2 years (range=17–26.5 months)

**Follow up**

36 months

**RESULTS**

Because differences between full-term and preterm children were found on the BEB-KV, data were analyzed separately.

- Using a Mann-Whitney U test, full-term children in the treatment group scored higher than the control group at 30 months ( $U=7.0$ ,  $z=-2.20$ ,  $p < .03$ ), with the most significant differences on the orientation and mobility and daily living scales. A decrease in these differences was seen at 36 months.
- There were no significant differences between the preterm intervention and control groups after intervention.

**CONCLUSIONS**

- Intervention effects were positive for the group of full-term, but not for the group of preterm, infants.
- Differences in performance between the groups were small at first but became significant at 30 months, particularly in the area of orientation and mobility.
- Comprehensive training with a high level of parent involvement as early as possible, particularly for orientation and mobility, is recommended.

**LIMITATIONS**

Biases

	Attention		Masking/blinding		Drop outs
X	Contamination		Co-intervention		

- Control children were also receiving intervention.
- Ceiling effects were apparent on some scales for the intervention group.
- Selection effects for the control group were present (most were high performers).
- Recruitment of the subjects was unclear.
- Cohort specified between 1989-1992.
- Required to read other published articles for the treatment protocols.

- Terminology used in this document is based on two systems of classification current at the time the evidence-based literature reviews were completed: *Uniform*

*Terminology for Occupational Therapy Practice—Third Edition* (AOTA, 1994) and *International Classification of Functioning, Disability and Health (ICIDH-2)* (World Health Organization [WHO], 1999). More recently, the *Uniform Terminology* document was replaced by *Occupational Therapy Practice Framework: Domain and Process* (AOTA, 2002), and modifications to *ICIDH-2* were finalized in the *International Classification of Functioning, Disability and Health* (WHO, 2001).

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For more information about the Evidence-Based Literature Review Project, contact the Practice Department at the American Occupational Therapy Association, 301-652-6611, x 2040.

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