

BSID-II-NL project

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RuG

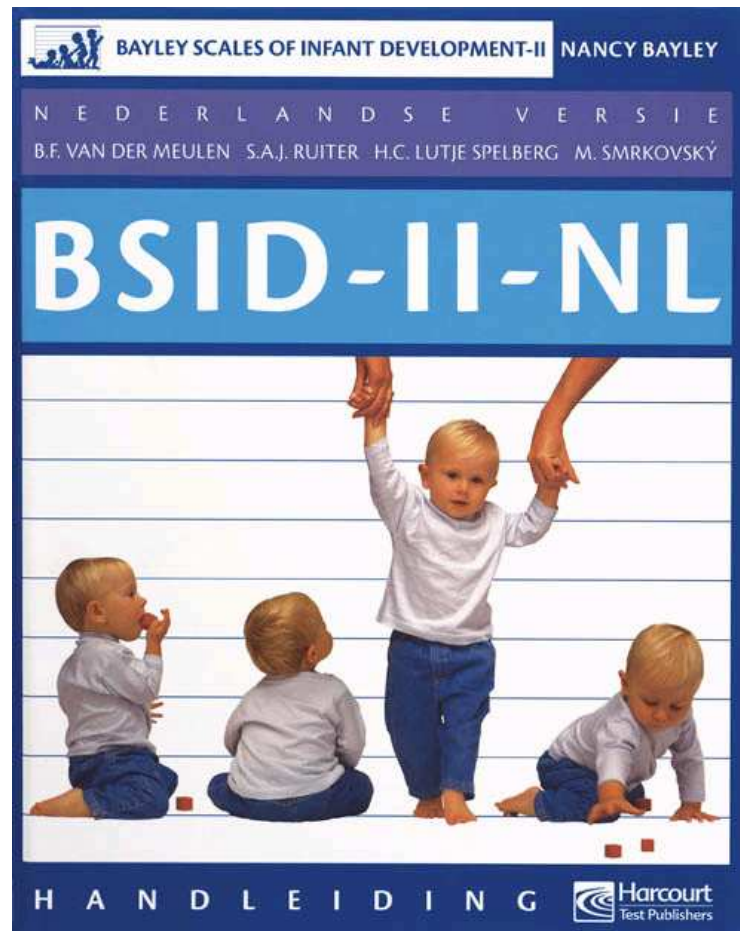
BSID-II-NL project

- Dutch standardization and validation project
 - Important alterations
 - Two results of psychometric studies
- Adapted versions
 - Premature
 - Non-verbal
 - Low Vision (experimental)
 - Low Motor (experimental)
- Discussion about the applicability of these adapted versions worldwide

Dutch standardisation and validation

- 1998: translation
- 1999: pilot study
- 2000 – 2002: standardization study
(publication of the practical manual)

Dutch manual



Dutch Record form

MENTALE SCHAAAL										
Leeftijdsgroep	Item	Item-moeilijkheid	Positie	Materiaal	Volgend item		Vorig item in serie	Scoringcriteria en opmerkingen	Score	
					Scoren	Afnemen			positief	negatief
START → 1 MND	1 Kijkt een persoon vluchtig aan	0;2	achteroverliggend		14, 19 21					
	2* Wordt stil bij optillen	0;2	achteroverliggend							
	3 Reageert op stem	1;0	achteroverliggend							
	4* Spontaan onderzoek van omgeving	0;2								
	5 Ogen volgen bewegende persoon	1;0	achteroverliggend							
	6 Bekijkt ring 3 seconden	0;2	achteroverliggend	ring met koordje		15				
	7 Went aan geluid van rammelaar	1;0	achteroverliggend	rammelaar		8		Poging 1 2 3 4 5		
	8 Onderscheidt bel van rammelaar	1;0	achteroverliggend	bel			7			
	9 Zoekt met ogen naar geluid	1;0	achteroverliggend, vaste hoofdpositie	bel & rammelaar			8			
	10* Vocaliseert 4 keer	0;3								
	11 Anticiperende opwinding	1;2	achteroverliggend		12		2			
	12 Anticiperende aanpassing bij optillen	0;1	achteroverliggend				11			
START → 2 MND	13 Visuele herkenning van ouder	0;3	achteroverliggend		20	20				
	14 Glimlacht als testleider praat	1;3	achteroverliggend		19, 21 33		1			
	15 Horizontale oogcoördinatie: ring	0;3	achteroverliggend	ring met koordje		16	6			
Subtotaal positief										

Itemmoeilijkheid = de leeftijd waarop 50% van de kinderen een positieve score behaalt (maand en week)
 Item = Niet-verbale schaal / blauw cursief cijfer = alternatieve nummering

Important alterations

1. Basal – Ceiling Rules
2. Day norms
3. Factor structure of the BRS

Comparison of the original (US) and adjusted (NL) basal and ceiling rules

	<i>Original (US)</i>		<i>Adjusted (NL)</i>	
	Mental scale	Motor scale	Mental scale	Motor scale
Basal	≥ 5 items	≥ 4 items	≥ 8 items	≥ 5 items
	positive	positive	positive	positive
Ceiling	≤ 3 items	≤ 2 items	≤ 5 items	≤ 3 items
	negative	negative	negative	negative

Test results comparing original (US) vs. adjusted (NL) basal and ceiling rules

		Item Set	Credit	No Credit	Raw Score	Mental Index US	Mental Index NL
Case 2:	Lauren (29 mo)	23-25 mo	14	22	126	61	73
		26-28 mo	8	24	130	69	78
		29-31 mo	5	23	135	79	-
Case 3:	Daren (40 mo)	26-28 mo	16	16	138	<50	<55
		29-31 mo	10	18	140	50	55
		32-34 mo	7	24	142	54	-
		35-37 mo	5	24	144	58	-
		38-42 mo	4	29	146	-	-
Case 4:	Ian (33 mo)	20-22 mo	9	20	115	<50	61
		23-25 mo	11	25	123	51	66
		26-28 mo	8	24	130	58	73
		29-31 mo	5	23	135	68	-
		32-34 mo	5	26	140	78	-

From: Washington et al. (1998): Table 1: Multiple Possible Outcomes for Cases 2, 3, and 4 (Mental Scale), slightly adjusted

Dutch standardisation and validation

- 1998: translation
- 1999: pilot study
- 2000 – 2002: standardization study
(publication of the practical manual)
- 2002-2004: validation and reliability studies
(publication of the technical manual)

Two results

		Correlation	n
BSID-II-NL - SON 2,5-7	Mental scale	.55**	28
BSID-II-NL 18 months versus BSID-II--NL 30 months	Mental scale	.58**	62
	Motor scale	.33**	61

Dutch standardisation and validation

- 1998: translation
- 1999: pilot study
- 2000 – 2002: standardization study
(publication of the practical manual)
- 2002-2004: validation and reliability studies
(publication of the technical manual)
- 2003-2005: adaptations for special groups
- 2005-2006: dissertation

ADAPTIVE USE OF THE BAYLEY SCALES OF INFANT DEVELOPMENT – II

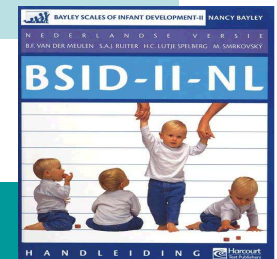
A STANDARDISED DIAGNOSTIC INSTRUMENT 1- 42 MONTHS



S.A.J. Ruiter; B.F. van der Meulen; H. Nakken; H.C. Lutje Spelberg

Contact: s.a.j.ruiter@rug.nl

RUG



Research goal

The development of adaptive versions of the BSID-II for use with specific groups of children

To address concerns of test bias for children with physical, visual, or speech and/or hearing problems, we established adapted procedures, item instructions and play material of a standard instrument. The changes provide the children with the unbiased item, but with the original content and difficulty so that the norms of the 'standard' BSID-II are still applicable.

Premature

<i>Goal</i>	Mental and Motor developmental Index
<i>Group</i>	Premature infants
<i>Age level</i>	1 – 42 months
<i>Norms</i>	Standardized 1 – 42 months
<i>Adjusted material</i>	Testprocedure

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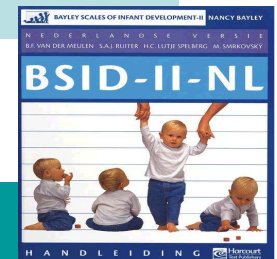
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	Premature	Non Verbal
<i>Goal</i>	Mental and Motor developmental Index	Mental developmental Index
<i>Group</i>	Premature infants	Children with speech and hearing problems
<i>Age level</i>	1 – 42 months	12 – 30 months
<i>Norms</i>	Standardized 1 – 42 months	Standardized 12 – 30 months
<i>Adjusted material</i>	Testprocedure	Test procedure and item instructions

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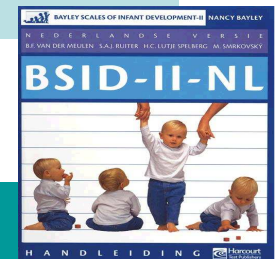
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	Premature	Non Verbal	Low Motor
<i>Goal</i>	Mental and Motor developmental Index	Mental developmental Index	Mental developmental index
<i>Group</i>	Premature infants	Children with speech and hearing problems	Children with physical impairments
<i>Age level</i>	1 – 42 months	12 – 30 months	12 – 42 months
<i>Norms</i>	Standardized 1 – 42 months	Standardized 12 – 30 months	Standardized 12 – 42 months
<i>Adjusted material</i>	Testprocedure	Test procedure and item instructions	Test procedure, item instructions and play material

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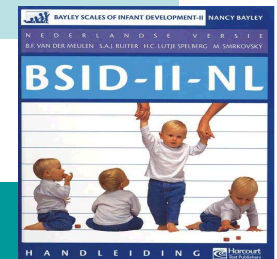
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	Premature	Non Verbal	Low Motor	Low Vision
<i>Goal</i>	Mental and Motor developmental Index	Mental developmental Index	Mental developmental index	Mental and Motor developmental index
<i>Group</i>	Premature infants	Children with speech and hearing problems	Children with physical impairments	Children with visual impairments
<i>Age level</i>	1 – 42 months	12 – 30 months	12 – 42 months	1 – 42 months
<i>Norms</i>	Standardized 1 – 42 months	Standardized 12 – 30 months	Standardized 12 – 42 months	Standardized 1 – 42 months
<i>Adjusted material</i>	Testprocedure	Test procedure and item instructions	Test procedure, item instructions and play material	Test procedure, item instructions and play material

BSID-II-NL and prematurity correction

Three questions

1. Where to start?
2. How to administer?
3. How to interpret the scores?

Three answers

1. Start in the chronological age item set
2. Administer both the chronological age item set and the corrected age item set
3. Matching raw scores with norm table:
 1. Index score chronological age
 2. Index score corrected age

Further research

1. Empirical justification for alternative testprocedure
2. Determining to what age correction for prematurity can be recommended

Non-verbal version

- Mental scale 12 – 30 months
- Non-verbal items are a selection of the original
- Emphasizing natural gestures or pantomime instruction
- Assess the overall cognitive developmental functioning without the use of spoken language.

Selection of items

- Unchanged (non-verbal) items
 - e.g. item 82 *Suspends ring by string*
- Items with emphasizing natural gestures
 - e.g. item 60 *Attends to scribbling*
- Items with pantomime instructions
 - e.g. item 89 *Puts six beads in box*

Low Motor and Low Vision (experimental)

- Aim:
 - Gain insight in the developmental course of low motor / low vision children
 - Facilitate effective interventions and follow up
 - Enables better research on the specific development of these groups of children.

Starting point

- Only compensate for the child's impairment



- Item content remain unchanged
- Item difficulty remain unchanged



- Original (BSID-II-NL) index scores are applicable

Adaptations (experimental)

- Low Motor
 - Mental scale 12 – 42 months
- Low Vision
 - Mental and Motor scale 1 – 42 months
- Test procedure
- Item instruction
- Play material

Focus group Low Vision

- 1 – 42 months (developmental) age
- Visual ability about 1/20 to 1/3 and/or
- Reduced range of vision between 10 and 30 degrees

Low Vision



Low Vision



Low Vision

Examples of Adaptations:

- Test procedure
 - Directions for the child's positioning and intensity of artificial light

Low Vision

Examples of Adaptations:

- Test procedure
 - Directions for the child's positioning and intensity of artificial light
- Item instruction
 - Directions for extending the exploring time and broaden the time limit
 - Place the pegs in the child's hands instead of on the table (pegboard, sorting)

Low Vision

Examples of Adaptations:

- Test procedure
 - Directions for the child's positioning and intensity of artificial light
- Item instruction
 - Directions for extending the exploring time and broaden the time limit
 - Place the pegs in the child's hands instead of on the table (pegboard, sorting)
- Play material
 - Colour contrast, clearer lines

Focus group Low Motor

- General: children with motor impairments in the age level 12 - 42 months (developmental) age
- **Inclusion criteria**
 1. The child should be able to sit or stand up in its (wheel)chair.
 2. The child should be able to see
 3. The child should be able to use and (roughly) coordinate at least one hand

Low Motor

Examples of Adaptations:

- Test procedure
 - Allow the child ample time to explore the material and to perform

Low Motor

Examples of Adaptations:

- Test procedure
 - Allow the child ample time to explore the material and to perform
- Item instruction
 - Eliminate all time limits
 - Allowing the child to point with his eyes (glance direction)

Low Motor

Examples of Adaptations:

- Test procedure
 - Allow the child ample time to explore the material and to perform
- Item instruction
 - Eliminate all time limits
 - Allowing the child to point with his eyes (glance direction)
- Play material
 - Enlarged materials: blocks, puzzleboard, pegboard en pegs

Applicability worldwide

- Applicable to standard sets worldwide
 - Combination with the standard set
 - Item content unchanged

Further research

- Finish validity and reliability studies
- Develop the final versions
- Implement the adapted versions