

served OR of combined exposure to GDM and SEP.<sup>6</sup> Data were analyzed using Stata (StataCorp).

**Results.** Mean participant age was 9.9 years; 50.1% (n=6751) were female. The prevalence of ADHD, GDM, and low SEP was 4.9% (n=660), 2.3% (n=280), and 25.5% (n=3420), respectively. Both maternal GDM and low SEP were significantly related to ADHD (**Table**). Multivariate regression modeling indicated that not only GDM (OR, 1.91; 95% CI, 1.21-3.01) and low SEP (OR, 2.04; 95% CI, 1.56-2.68) but also perinatal health problems, maternal smoking during pregnancy, and atopic eczema are independent risk factors for ADHD, whereas fully breastfeeding appears to be protective (irrespective of the duration of breastfeeding; data not shown). Further analyses indicated the presence of additive interaction between maternal GDM and SEP on the risk of ADHD (observed OR for middle-class children exposed to GDM: 3.47; expected OR: 2.93; observed OR for lower-class children exposed to GDM: 3.68; expected OR: 3.56).

**Comment.** Our study confirms the previously reported<sup>2</sup> association between low SEP, maternal GDM, and ADHD and their additive interaction as risk factors for ADHD in a large population-based sample. Extending previous research, our study indicates that fully breastfeeding may have protective effects on childhood ADHD. Exposure to maternal smoking in pregnancy and perinatal health problems do seem to increase the risk for ADHD. Modification of these environmental risk factors by evidence-based prevention programs may help to decrease the burden of ADHD.

Jochen Schmitt, MD, MPH  
Marcel Romanos, MD

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**Author Affiliations:** Centre for Evidence-based Healthcare, Medical Faculty Carl Gustav Carus, Technical University Dresden, Dresden (Dr Schmitt), and Department of Child and Adolescent Psychiatry, Psychosomatics, and Psychotherapy, University Hospital of Würzburg, Würzburg (Dr Romanos), Germany.

**Correspondence:** Dr Schmitt, Centre for Evidence-based Healthcare, Medical Faculty Carl Gustav Carus, Technical University Dresden, Fetscherstrasse 74, D-01307 Dresden, Germany (jochen.schmitt@tu-dresden.de).

**Author Contributions:** *Study concept and design:* Schmitt and Romanos. *Analysis and interpretation of data:* Schmitt and Romanos. *Drafting of the manuscript:* Schmitt and Romanos. *Critical revision of the manuscript for important intellectual content:* Romanos. *Statistical analysis:* Schmitt. *Administrative, technical, and material support:* Schmitt.

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## Agreement Between Bayley Scales Second and Third Edition Assessments of Very Low-Birth-Weight Infants

The Bayley Scales of Infant Development (BSID) are the most widely used assessments to identify children with developmental delay. Between 1993 and 2006, the BSID—Second Edition (BSID-II)<sup>1</sup> was used; in 2006, a third edition (BSID-III)<sup>2</sup> was published.

Rather than the 2-factor model of the BSID-II that described mental and psychomotor development, the BSID-III purports to assess 5 separate areas: cognition, language, motor, social-emotional, and adaptive. The aim of this study was to compare the BSID-II Mental and Motor scale scores and the BSID-III Motor, Cognitive, and Language scale scores in a cohort of very low-birth-weight preterm infants.

**Methods.** This study was approved by our institutional ethics committee, and informed consent was obtained for all participants.

We enrolled preterm infants with a birth weight less than 1500 g and gestational age less than 32 weeks, who were born in the Hospital de Clínicas de Porto Alegre, a level 3 referral center for high-risk neonates in southern Brazil, and survived to 24 months of age. We excluded infants with major congenital malformations, inborn errors, or chromosomal anomalies, congenital infections, severe hearing loss, blindness, or severe cerebral palsy.

**Neurodevelopmental Assessments.** The BSID-II was administered at 22 to 24 months' corrected age, immediately before a follow-up visit to our Follow-up Clinic. The BSID-II yields a Mental Development Index and Psychomotor Development Index. Within 2 months after the assessment with the BSID-II, study participants were assessed using the BSID-III, which yields Cognitive, Language, and Motor scale scores. A single psychologist (G.R.F.) administered the BSID-II and BSID-III in Portuguese.

**Statistical Analyses.** Comparison between groups was performed with a 2-tailed  $\chi^2$  test or Fisher exact test for categorical variables and a *t* test or Mann-Whitney test for continuous variables.

**Results.** During the study period, 60 children met inclusion criteria and underwent BSID-II and BSID-III assessments at 22 to 24 months' corrected age. The mean

**Table. Comparison of Assessments With the BSID-II or BSID-III**

	BSID-II	BSID-III	P Value
Cognitive score, median (IQR) <sup>a</sup>	81 (75-87)	90 (85-95)	<.001
Language score, median (IQR) <sup>a</sup>	NA	89 (83-94)	<.001
Motor score, median (IQR) <sup>a</sup>	80 (74-90)	94 (85-100)	<.001
Cognitive delay, No. (%) <sup>b</sup>	38 (63.3)	26 (43.3)	.02
Language delay, No. (%) <sup>b</sup>	38 (63.3)	27 (45)	.03
Motor delay, No. (%) <sup>b</sup>	37 (61.7)	21 (35)	.002

Abbreviations: BSID-II, Bayley Scales of Infant Development–Second Edition; BSID-III, Bayley Scales of Infant and Toddler Development–Third Edition; IQR, interquartile range; NA, not applicable.

<sup>a</sup>Mann-Whitney test.

<sup>b</sup> $\chi^2$  Test.

birth weight and gestational age were 1200 g and 30 weeks, respectively; 66% were female and 58 were small for gestational age. Median scores (interquartile range) for the BSID-II Mental Development Index and Psychomotor Development Index were 81 (75-87) and 80 (74-90), respectively (**Table**). On the BSID-III, median scores (interquartile range) for the Cognitive, Language, and Motor scales were 90 (85-95), 89 (83-94), and 94 (85-100), respectively. The median score for the BSID-II Mental Development Index was 9 points lower than that of the BSID-III Cognitive Scale score and 8 points lower than the BSID-III Language Scale score. The median score for the BSID-II Psychomotor Development Index was 14 points lower than the BSID-III Motor Scale score. Infants were more likely to be classified as having developmental delay when assessed with the BSID-II.

**Comment.** We found that among a cohort of very low-birth-weight preterm infants who were assessed at about 24 months' adjusted age, lower scores were obtained using the BSID-II as compared with the BSID-III. This was particularly evident with assessment of motor skills, where the difference between BSID-II and BSID-III scores was almost equal to 1 SD. These findings agree with studies of infants who underwent neonatal surgery for congenital heart disease<sup>3</sup> and infants born prematurely.<sup>4,5</sup> Our study has implications for those interested in improving developmental outcome for high-risk infants. As emphasized by Msall,<sup>6</sup> clinicians should be mindful of the possibility that the BSID-III is less sensitive than the BSID-II for identification of infants who might benefit from early intervention. Researchers should be cautious when comparing studies using the 2 most recent versions of the BSID

and when estimating sample size for prospective studies based on data collected with the BSID-II.

Rita C. Silveira, PhD, MD  
Gabriela R. Filipouski, PSc, MSc  
Donald J. Goldstein, PhD  
T. Michael O'Shea, MD, MPH  
Renato S. Procianoy, PhD, MD

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**Author Affiliations:** Neonatal Section, Department of Pediatrics, Universidade Federal do Rio Grande do Sul and Hospital de Clinicas de Porto Alegre, Porto Alegre, Brazil (Drs Silveira, Filipouski, and Procianoy); and Department of Pediatrics, Wake Forest School of Medicine, Winston-Salem, North Carolina (Dr Goldstein and O'Shea).  
**Correspondence:** Dr O'Shea, Department of Pediatrics, Wake Forest University School of Medicine, Winston-Salem, NC 27157 (moshea@wfubmc.edu).

**Author Contributions:** Drs Silveira and Procianoy had full access to all the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis. *Study concept and design:* Silveira and Procianoy. *Acquisition of data:* Silveira, Filipouski, and Procianoy. *Analysis and interpretation of data:* Silveira, Goldstein, O'Shea, and Procianoy. *Drafting of the manuscript:* Silveira, Filipouski, O'Shea, and Procianoy. *Critical revision of the manuscript for important intellectual content:* Silveira, Goldstein, O'Shea, and Procianoy. *Statistical analysis:* Silveira, Filipouski, O'Shea, and Procianoy. *Administrative, technical, and material support:* Silveira, Filipouski, Goldstein, and Procianoy. *Study supervision:* Silveira and Procianoy.

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