

PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Home | Current Issue | AAP Policy | eArchives | Supplements | Topic Collections | Subscribe | Contact Us

Advanced Search

DIATRICALS

new
My Account
feeds

UTIONS

My Account
My Subscriptions

RS

Guidelines
ght Form
il Policies
and Track My
cript

AL INFORMATION

he Journal
il Board
ws Media
vertisers

YES

sions
s

ED RESOURCES

urnals

is

ET PEDIATRICS
MAIL ALERTS

Published online March 2, 2009

PEDIATRICS Vol. 123 No. 3 March 2009, pp. 1037-1044 (doi:10.1542/peds.2008-1162)

ARTICLE

Lasting Effects of Preterm Birth and Neonatal Brain Hemorrhage at 12 Years of Age

Thuy Mai Luu, MD^a, Laura R. Ment, MD^b,
Karen C. Schneider, MPH^b, Karol H. Katz, MS^b,
Walter C. Allan, MD^c and Betty R. Vohr, MD^a

^a Department of Pediatrics, Warren Alpert School of Medicine of Brown University, Providence, Rhode Island
^b Departments of Pediatrics and Neurology, Yale University School of Medicine, New Haven, Connecticut
^c Department of Pediatrics, Maine Medical Center, Portland, Maine

OBJECTIVES. Our goals were to compare cognitive, language, behavioral, and educational outcomes of preterm children to term controls and to evaluate the impact of neonatal brain injury, indomethacin, and environmental risk factors on intellectual function at 12 years of age.

METHODS. A total of 375 children born in 1989–1992 with birth weights of 600 to 1250 g enrolled in the Indomethacin Intraventricular Hemorrhage Prevention Trial and 111 controls were evaluated. Neuropsychometric testing, neurologic examination, and interviews on educational needs were completed. Severe brain injury was defined as the presence of grade 3 to 4 indomethacin intraventricular hemorrhage, periventricular leukomalacia, or severe ventriculomegaly on cranial ultrasound.

RESULTS. On the Wechsler Scales of Intelligence for Children, the preterm cohort obtained a full-scale IQ of 87.9 ± 18.3 , verbal IQ of 90.8 ± 18.9 , and performance IQ of 86.8 ± 17.9 . Preterm children obtained scores 6 to 14 points lower than term controls on all psychometric tests after adjustment for sociodemographic factors. On the Clinical Evaluation of Language Fundamentals (test

This Article

- ▶ Full Text
- ▶ Full Text (PDF)
- ▶ Submit a response
- ▶ Alert me when this article is
- ▶ Alert me when eLetters are p
- ▶ Alert me if a correction is po
- ▶ Citation Map

Services

- ▶ E-mail this article to a friend
- ▶ Similar articles in this journa
- ▶ Similar articles in PubMed
- ▶ Alert me to new issues of th
- ▶ Add to My File Cabinet
- ▶ Download to citation manag
- ▶ Request Permissions

Citing Articles

- ▶ Citing Articles via CrossRef

Google Scholar

- ▶ Articles by Luu, T. M.
- ▶ Articles by Vohr, B. R.

PubMed

- ▶ PubMed Citation
- ▶ Articles by Luu, T. M.
- ▶ Articles by Vohr, B. R.

Related Collections

- ▶ Premature & Newborn

OPEN UP NOW FREE

language skills), 22% to 24% of preterm children scored in the abnormal ranges (<70) as opposed to 2% to 4% of controls. Preterm children with and without brain injury required more school services (76% and 44% vs 16%), and support in reading (44% and 28% vs 9%), writing (44% vs 20%), and mathematics (47% and 30% vs 6%) compared with controls. Preterm children also displayed more behavior problems than their term counterparts. Severe neonatal brain injury was the strongest predictor of poor intelligence. Antenatal steroids, higher maternal education, and 2-parent family were associated with better cognition, whereas minority status incurred a disadvantage. Indomethacin did not affect intellectual function among preterm children.

CONCLUSIONS. Preterm children born in the early 1990s, especially those with severe brain injury, demonstrate serious deficits in their neuropsychological profile, which translates into increased use of school services at 12 years.

Key Words: very low birth weight • prematurity • cognition • language • school outcomes

Abbreviations: IVH—intraventricular hemorrhage • BPD—bronchopulmonary dysplasia • PVL—periventricular leukomalacia • WISC—Wechsler Intelligence Scale for Children • VIQ—verbal IQ • PIQ—performance IQ • FSIQ—full-scale IQ • PPVT-R—Peabody Picture Vocabulary Test • CTOPP—Comprehensive Test of Phonological Processing • CELF—Clinical Evaluation of



American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN™



Copyright American Academy of Pediatrics. All rights reserved.

1 Academy of Pediatrics, 141 Northwest Point Blvd., Elk Grove Village, IL, 847-434-4000

[Contact AAP](#) | [Privacy Statement](#) | [A](#)

[e for faster international access](#)