

# PRENATAL MATERNAL AND NEONATAL URINARY BISPHENOL A AND NEURODEVELOPMENT IN THE FIRST TWO YEARS FROM THE MOCEH STUDY

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**Background and Aims:** The exposure of pregnant women to bisphenol A may result in fetal or neonatal mortality, birth defects, or reduced birth weight and growth in their offspring (The US NTP). To investigate the effect of the prenatal maternal and the neonatal urinary BPA concentration on children's neurodevelopment at 6, 12, and 24 months

**Methods:** Six hundred sixty three pairs (mother and infant) in the Mothers and Children's Environmental Health (MOCEH) study, a multicenter prospective cohort study since 2006, were analyzed 6 through 24 months old of child. Korean version of the Bayley Scales of Infant Development-Revised (BSID-II) was used to assess cognitive and psychomotor development at 6, 12, and 24 months of age. Prenatal urinary BPA were measured at 20 weeks, 35-40 weeks of gestational age and neonatal urinary BPA was measured at neonatal unit. The multivariate linear regression and mixed effect model adjusted for several confounding variables were used to show the association between urinary BPA level and baby's neurodevelopment.

**Results:** Geometric means (geometric standard deviation) of maternal (20 weeks and 35-40 weeks of gestational age) and neonatal urinary BPA concentration were 0.56 (4.47), 0.82 (5.24), 3.30 (4.27) •g/L, respectively. The neonatal urinary BPA concentration was not significantly correlated with maternal urinary BPA concentration. Prenatal maternal urinary BPA concentration at 35-40 weeks of gestational age positively associated with mental development index at 24 months of age in male compared to the mental development index at 6 months ( $\beta=2.07$ ,  $p=0.004$ ). The neonatal urinary BPA concentration was not associated with children's neurodevelopment index at 6, 12, and 24 months.

**Conclusions:** Prenatal maternal urinary BPA concentrations were positively associated with neurodevelopment in children at 2 years old.

## References:

National Institute of Environmental Health Sciences – National Institutes of Health. U.S. [National Toxicology Program](http://www.niehs.nih.gov/news/media/questions/ntp-speaks-bpa.cfm) speaks on BPA. website: <http://www.niehs.nih.gov/news/media/questions/ntp-speaks-bpa.cfm>