

# PERFLUORINATED COMPOUND LEVELS IN UMBILICAL CORD BLOOD AND CHILD BEHAVIOR AT 2 YEARS OF AGE

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**Background and Aims:** The perfluorinated compound (PFCs) is persistent organic pollutants with global distribution. Their adverse impact on neurobehavior had been reported in animal studies with high dose exposure. Yet, the evidence in human studies is inconclusive. The aim of this study was to explore the association between child behavior at the 2 years of age and the concentration of PFCs in umbilical cord blood plasma.

**Methods:** A prospective cohort study was conducted among 238 mother-infant pairs between 2004 and 2005 in northern Taiwan. Structured questionnaires were used to obtain demographic data including exposure history during pregnancy. Cord blood was collected for PFOA and PFOS analysis by using UPLC-MS/MS method. Children's behavior problems at 2 years of age were obtained through maternal reported Child Behavior Checklist/1.5-5. PFCs levels in cord blood plasma were  $\log_{10}$  transformed to fit normal distribution. Multiple linear regression models were used to assess the effects of PFCs exposure on child behavior

**Results:** The average concentration of PFOA and PFOS levels in cord blood plasma were 2.48 ng/mL (standard deviation, SD: 2.53) and 6.90 ng/mL (SD: 2.53), respectively. We found no association between scores of Child Behavior Checklist and cord blood levels of PFOA or PFOS.

**Conclusions:** Our data suggest no significant associations between prenatal PFOA and PFOS in general population and child behavior problems at the age of 2. However, other developmental problems or effect of higher exposure could not be concluded.

## References:

Olsen GW, Butenhoff JL, Zobel LR. Perfluoroalkyl chemicals and human fetal development: an epidemiologic review with clinical and toxicological perspectives. *Reprod Toxicol* 2009; 27: 212-230.