# MATERNAL EXPOSURE TO ENVIROMENTAL TOBACCO SMOKE DURING PREGNANCY AND OFFSPRING'S GROWTH AND OBESITY

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**Background and Aims:** The evidence of exposure to environmental tobacco smoke (ETS) on children's growth and obesity is limited and not sufficient to conclude a definitive relationship. The aim of this study was to examine whether maternal exposure to ETS will affect child grow or not.

**Methods:** We conducted a birth cohort study of 300 nonsmoking women who delivered normal birth weight singletons. We enrolled them before delivery, interviewed them with by a structured questionnaire, and collected umbilical cord blood. Cotinine in umbilical cord blood as an indicator of environmental tobacco smoke was analyzed by using HPLC-MS/MS and the detection limited of this method was 0.05 ng/mL. The child healthcare handbooks were used to record the child height, weight, head circumference and body mass index (BMI) from birth to three years of age. The information was measured by the doctor or nurse in each time to visit the clinic. Multiple linear regressions were used to explore the relation between maternal ETS exposure and child growth and obesity. Linear mixed model was used to explore the effect from birth to three years of age.

**Results:** Maternal ETS exposure was significantly associated with shorter child head circumference at birth ($\beta$ = -0.389; $P$ = 0.008) and 12 months ($\beta$ = -0.475; $P$ = 0.019) of age. Mixed model also showed adverse effect from birth to three years of age ($\beta$ = -0.606; $P$ = 0.003). In contrast,higher maternal ETS exposure showed significant higher body weight ($\beta$ = 0.494; $P$ = 0.050) and BMI ($\beta$ = 0.630; $P$ = 0.029) at 18 months of age.

**Conclusions:** It can be concluded that prenatal ETS exposure can cause adverse effect of child growth and future obesity.