

P-037**OZONE EXPOSURE AND PRETERM BIRTHS: EFFECT MODIFICATION BY MATERNAL DIABETES****Authors:**

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Background: Ambient air pollution and maternal diabetes may increase the risk of preterm birth. There are limited epidemiologic studies on the role of interaction between air pollution and maternal diabetes on the risk of preterm births.

Objectives: To investigate the joint effect of ozone and maternal diabetes on the development of preterm births.

Methods: We conducted a population-based case-control study in Taiwan. The case group consisted of 91,402 preterm births and the control group was frequency matched one to ten for month of conception from 1,199,008 singleton newborns in 2001-2007. We used routine air-pollution monitoring data for sulphur dioxide (SO₂), nitrogen dioxides (NO₂), ozone (O₃), carbon monoxide (CO), and particles with an aerodynamic diameter of 10 µm or less (PM₁₀). The effect estimates were presented as odds ratios per 10 ppb changes for O₃, NO₂, SO₂, 10 µg/m³ changes for PM₁₀, and 100 ppb changes for CO.

Results: In the logistic regression model adjusting for confounding the effect estimates of preterm births among diabetes women (adjusted OR=1.192, 95% CI: 1.084, 1.311) were higher than non-diabetes women (adjusted OR=1.024, 95% CI: 1.017, 1.031) in the first trimester O₃ exposure. An apparent effect modification between O₃ exposure and maternal diabetes were observed (p for interaction<0.01). Similar trend was found for second trimester and whole O₃ exposure.

Conclusions: Our finding suggests that interaction between maternal diabetes and O₃ exposure during the first and second trimester may play an important role in preterm births.

Keywords: Preterm birth, O₃, diabetes, interaction