

**O-085****AIR POLLUTION AND ALZHEIMER'S DISEASE: A POPULATION-BASED PROSPECTIVE COHORT STUDY IN TAIWAN.****Authors:**

**Shih-Wei Weng**, Department of Occupational Safety and Health, China Medical University, Taiwan  
**Yu-Ting Lin**, Department of Occupational Safety and Health, China Medical University, Taiwan  
**Bing-Fang Hwang**, Department of Occupational Safety and Health, China Medical University, Taiwan,  
*bfhwang@mail.cmu.edu.tw*

**Background:** There is evidence that air pollution may increase the risk of Alzheimer's disease in animals, but limited epidemiological studies concerning the role of ambient air pollution in the relation to Alzheimer's disease.

**Objective:** The aim of this study was to assess the relation between ambient air pollution and the risk of Alzheimer's disease.

**Methods:** We conducted a population-based 8-year prospective cohort study in Taiwan. The study population was included 556,708 subjects aged 35-101 without Alzheimer's disease at baseline. The outcome of interest was development of Alzheimer's disease (ICD-9-CM code: 3310) during the study period from 2000 through 2007. The air pollutant measurements from 72 EPA monitoring stations were integrated into yearly point data and interpolated to pollutant surfaces using inverse distance weighting (IDW) method since 1994. The exposure assessment was based on residential zip-code during the study period. The effect estimates were presented as hazard ratios per interquartile range (IQR) for the air pollutant.

**Results:** A total of 413 subjects developed Alzheimer's disease during the study period. In the Cox proportional hazard model adjusting for confounders, the risk of Alzheimer's disease was increased in relation to CO (adjusted HR=1.019, 95% CI: 1.002, 1.099) NO<sub>2</sub> (adjusted HR=1.324, 95% CI: 1.146, 1.531) and SO<sub>2</sub> exposure (adjusted HR=1.094, 95% CI: 1.012, 1.181).

**Conclusion:** The study provides evidence that exposure to ambient air pollutants such as CO, NO<sub>2</sub> and SO<sub>2</sub> may increase the risk of Alzheimer's disease.

**Keywords:** Air pollution; Alzheimer's disease; cohort study