



## Impact assessment of children's respiratory health due to Asian dust storms

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Abstract: Asian dust storm (ADS) is one of the major natural hazards in Taiwan which primarily originates from north and northwest China during winter and spring. Children population has been considered as one of the most sensitive populations in terms of health response. However, though studies have been investigated the potential health impact of ADS, its health risk to children's health is relatively less studied. Few studies have investigated the impact of ADS on children's health, especially in respiratory diseases. In this study, we collected daily children's clinic visits for respiratory diseases registered in 12 districts of Taipei City during 1997-2007, and applied a structured additive regression model to investigate the general impact on children's health across space and time, i.e. the temporal pattern of the health risks during and after ADS, and analyze them day-by-day after adjusting for nonlinear time trend, temperature, air pollutants, and spatial heterogeneity. This study clearly shows that children's respiratory health was positively affected during the period of post-ADS events across Taipei, especially among school children. The proposed analysis can provide governmental agencies to implement policies that protect children from the possible adverse health effect of ADS and to provide timely care for reducing unnecessary costs.