



## 2008 Joint Annual Conference

Exposure and Health in a Global Environment

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### Adult Onset Asthma among Never-smokers is associated with Air Pollution

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#### *Abstract:*

Traffic related air pollution is associated with asthma onset in children but poorly investigated in relation to adult onset asthma. We used the SAPALDIA cohort study to investigate the association between the 11-year change in annual home outdoor traffic related particulate matter (TPM10) and asthma incidence. TPM10 at baseline and follow-up was predicted and geographically interpolated by dispersion models using emission and meteo data. Cox proportional hazard models for time to asthma onset were adjusted (age, sex, atopy, education, baseline bronchial hyperreactivity (BHR) & BMI, work place exposure, parental asthma or allergies, area).

Among 2725 never-smokers without asthma/COPD at baseline (ages: 18-60 yrs in 1991), 41 reported asthma onset in 2002. Home outdoor TPM10 concentrations slightly improved (mean: -0.6; range -9 to +10; IQR 0.6 mcg/m<sup>3</sup>) during the interval. Asthma incidence correlated significantly with change in TPM10 and relative risks (RR) were not sensitive to model specification, ranging from 1.28 [95% CI: 1.01-1.61] (crude) to 1.30 [1.04-1.63] (full adjustment) per 1 unit change in TPM10. Interactions did not reach conventional levels for statistical significance but, as a general pattern, subgroups with inherently higher risks to develop asthma (age >40, atopy or BHR at baseline) and those not changing residential address during follow-up were more strongly affected by TPM10 (e.g. 1.71 [1.12-2.63]).

Our data suggest a role for traffic related pollution in adult onset asthma. This needs further investigation.<br

On behalf of Swiss Study on Air Pollution and Lung Diseases in Adults (SAPALDIA); Supported by Swiss National Science Foundation, CREAL, & ICREA

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#### **Categories (Complete):**

**Science Theme:** Air Quality – Exposure Characterization and Health Effects

**Type of Research:** Epidemiological Study

**Exposure:** Air Pollution – outdoors

**Effect:** Asthma

**Presentation Preference (Complete):** &nbsp;&nbsp;&nbsp;Oral

**Additional Information (Complete):**

**Student:** No

**Developing Country:** No

**Travel Award:** Not Applicable

**Student Poster Contest:** Not Applicable

: No

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**Final Status:** Consider this submission as final NOW

**Status:** Complete

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