

**Publication****Association between modelled traffic-related air pollution and asthma score in the ECRHS****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 1196738**Author(s)** Jacquemin, B.; Sunyer, J.; Forsberg, B.; Aguilera, I.; Bouso, L.; Briggs, D.; de Marco R.,; Garcia-Esteban R.,; Heinrich, J.; Jarvis, D.; Maldonado, J. A.; Payo, F.; Rage, E.; Vienneau, D.; Künzli, N.**Author(s) at UniBasel** Künzli, Nino ;**Year** 2009**Title** Association between modelled traffic-related air pollution and asthma score in the ECRHS**Journal** The European respiratory journal**Volume** 34**Number** 4**Pages / Article-Number** 834-842**Keywords** Air pollution, asthma, asthma score**Mesh terms** Adult; Air Pollutants, adverse effects; Asthma, epidemiology; Environmental Exposure, statistics & numerical data; Female; Follow-Up Studies; Health Surveys; Humans; Male; Middle Aged; Motor Vehicles; Multivariate Analysis; Nitrogen Dioxide, adverse effects; Severity of Illness Index; Vehicle Emissions, toxicity

The aim of our analysis was to study the association between air pollution and asthma among adults. For this goal, a previously developed 'asthma score' was used. Persons aged 25-44 yrs were randomly selected (1991-1993) and followed up (2000-2002) within the European Community Respiratory Health Survey (ECRHS I and II, respectively). The asthma score was defined from 0 to 5, based on the positive answers to the following symptoms reported for the last 12 months: wheeze/breathlessness, chest tightness, dyspnoea at rest, dyspnoea after exercise and woken by dyspnoea. Participants' home addresses were linked to outdoor modelled NO<sub>2</sub> estimates for 2001. Negative binomial regression was used to model the asthma score. The score from ECRHS II was positively associated with NO<sub>2</sub> (ratio of the mean asthma score (RMS) 1.23, 95% CI 1.09-1.38, for an increase of 10 microg x m<sup>-3</sup>). After excluding participants with asthma and symptoms at baseline, the association remained (RMS 1.25, 95% CI 1.05-1.51), and was particularly high among those reporting a high score in ECRHS II. The latter probably reflects incident cases of asthma. Our results suggest that traffic-related pollution causes asthma symptoms and possibly asthma incidence in adults. The asthma score offers an alternative with which to investigate the course and aetiology of asthma in adults

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