

**Publication****Air pollution from road traffic and systemic inflammation in adults : a cross-sectional analysis in the European ESCAPE project****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 3199291**Author(s)** Lanki, Timo; Hampel, Regina; Tiittanen, Pekka; Andrich, Silke; Beelen, Rob; Brunekreef, Bert; Dratva, Julia; De Faire, Ulf; Fuks, Kateryna B.; Hoffmann, Barbara; Imboden, Medea; Jousilahti, Pekka; Koenig, Wolfgang; Mahabadi, Amir A.; Künzli, Nino; Pedersen, Nancy L.; Penell, Johanna; Pershagen, Göran; Probst-Hensch, Nicole M.; Schaffner, Emmanuel; Schindler, Christian; Sugiri, Dorothea; Swart, Wim J. R.; Tsai, Ming-Yi; Turunen, Anu W.; Weinmayr, Gudrun; Wolf, Kathrin; Yli-Tuomi, Tarja; Peters, Annette**Author(s) at UniBasel** [Dratva, Julia](#) ; [Imboden, Medea](#) ; [Künzli, Nino](#) ; [Probst Hensch, Nicole](#) ; [Schaffner, Emmanuel](#) ; [Schindler, Christian](#) ; [Tsai, Ming-Yi](#) ;**Year** 2015**Title** Air pollution from road traffic and systemic inflammation in adults : a cross-sectional analysis in the European ESCAPE project**Journal** Environmental Health Perspectives**Volume** 123**Number** 8**Pages / Article-Number** 785-91

Exposure to particulate matter air pollution (PM) has been associated with cardiovascular diseases.; In this study we evaluated whether annual exposure to ambient air pollution is associated with systemic inflammation, which is hypothesized to be an intermediate step to cardiovascular disease.; Six cohorts of adults from Central and Northern Europe were used in this cross-sectional study as part of the larger ESCAPE project (European Study of Cohorts for Air Pollution Effects). Data on levels of blood markers for systemic inflammation-high-sensitivity C-reactive protein (CRP) and fibrinogen-were available for 22,561 and 17,428 persons, respectively. Land use regression models were used to estimate cohort participants' long-term exposure to various size fractions of PM, soot, and nitrogen oxides (NOx). In addition, traffic intensity on the closest street and traffic load within 100 m from home were used as indicators of traffic air pollution exposure.; Particulate air pollution was not associated with systemic inflammation. However, cohort participants living on a busy (< 10,000 vehicles/day) road had elevated CRP values (10.2%; 95% CI: 2.4, 18.8%, compared with persons living on a quiet residential street with > 1,000 vehicles/day). Annual NOx concentration was also positively associated with levels of CRP (3.2%; 95% CI: 0.3, 6.1 per 20 µg/m<sup>3</sup>), but the effect estimate was more sensitive to model adjustments. For fibrinogen, no consistent associations were observed.; Living close to busy traffic was associated with increased CRP concentrations, a known risk factor for cardiovascular diseases. However, it remains unclear which specific air pollutants are responsible for the association.

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