

Publication**Air pollution and mortality in seven million adults : the Dutch Environmental Longitudinal Study (DUELS)****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 3180860**Author(s)** Fischer, Paul H.; Marra, Marten; Ameling, Caroline B.; Hoek, Gerard; Beelen, Rob; de Hoogh, Kees; Breugelmans, Oscar; Kruize, Hanneke; Janssen, Nicole A. H.; Houthuijs, Danny**Author(s) at UniBasel** [de Hoogh, Kees](#) ;**Year** 2015**Title** Air pollution and mortality in seven million adults : the Dutch Environmental Longitudinal Study (DUELS)**Journal** Environmental Health Perspectives**Volume** 123**Number** 7**Pages / Article-Number** 697-704

Long-term exposure to air pollution has been associated with mortality in urban cohort studies. Few studies have investigated this association in large-scale population registries, including non-urban populations.; The aim of the study was to evaluate the associations between long-term exposure to air pollution and nonaccidental and cause-specific mortality in the Netherlands based on existing national databases.; We used existing Dutch national databases on mortality, individual characteristics, residence history, neighborhood characteristics, and national air pollution maps based on land use regression (LUR) techniques for particulates with an aerodynamic diameter $\leq 10 \mu\text{m}$ (PM10) and nitrogen dioxide (NO₂). Using these databases, we established a cohort of 7.1 million individuals ≥ 30 years of age. We followed the cohort for 7 years (2004-2011). We applied Cox proportional hazard models adjusting for potential individual and area-specific confounders.; After adjustment for individual and area-specific confounders, for each 10- $\mu\text{g}/\text{m}^3$ increase, PM10 and NO₂ were associated with nonaccidental mortality [hazard ratio (HR) = 1.08; 95% CI: 1.07, 1.09 and HR = 1.03; 95% CI: 1.02, 1.03, respectively], respiratory mortality (HR = 1.13; 95% CI: 1.10, 1.17 and HR = 1.02; 95% CI: 1.01, 1.03, respectively), and lung cancer mortality (HR = 1.26; 95% CI: 1.21, 1.30 and HR = 1.10 95% CI: 1.09, 1.11, respectively). Furthermore, PM10 was associated with circulatory disease mortality (HR = 1.06; 95% CI: 1.04, 1.08), but NO₂ was not (HR = 1.00; 95% CI: 0.99, 1.01). PM10 associations were robust to adjustment for NO₂; NO₂ associations remained for nonaccidental mortality and lung cancer mortality after adjustment for PM10.; Long-term exposure to PM10 and NO₂ was associated with nonaccidental and cause-specific mortality in the Dutch population of ≥ 30 years of age.

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