

Publication

Air pollution and nonmalignant respiratory mortality in 16 cohorts within the ESCAPE project

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Rationale: Prospective cohort studies have shown that chronic exposure to particulate matter and traffic-related air pollution is associated with reduced survival. However, the effects on nonmalignant respiratory mortality are less studied, and the data reported are less consistent. Objectives: We have investigated the relationship of long-term exposure to air pollution and nonmalignant respiratory mortality in 16 cohorts with individual level data within the multicenter European Study of Cohorts for Air Pollution Effects (ESCAPE). Methods: Data from 16 ongoing cohort studies from Europe were used. The total number of subjects was 307,553. There were 1,559 respiratory deaths during follow-up. Measurements and Main Results: Air pollution exposure was estimated by land use regression models at the baseline residential addresses of study participants and traffic-proximity variables were derived from geographical databases following a standardized procedure within the ESCAPE study. Cohort-specific hazard ratios obtained by Cox proportional hazard models from standardized individual cohort analyses were combined using metaanalyses. We found no significant associations between air pollution exposure and nonmalignant respiratory mortality. Most hazard ratios were slightly below unity, with the exception of the traffic-proximity indicators. Conclusions: In this study of 16 cohorts, there was no association between air pollution exposure and nonmalignant respiratory mortality.

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