

Publication

Long-term exposure to black carbon and mortality: a 28-year follow-up of the GAZEL cohort

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)**ID** 4646023**Author(s)** Yang, J.; Zare Sakhvidi, M. J.; de Hoogh, K.; Vienneau, D.; Siemiatycki, J.; Zins, M.; Goldberg, M.; Chen, J.; Lequy, E.; Jacquemin, B.**Author(s) at UniBasel** [Vienneau, Danielle](#) ; [de Hoogh, Kees](#) ;**Year** 2021**Title** Long-term exposure to black carbon and mortality: a 28-year follow-up of the GAZEL cohort**Journal** Environment international**Volume** 157**Pages / Article-Number** 106805**Mesh terms** Air Pollutants, toxicity; Air Pollution, statistics & numerical data; Carbon; Environmental Exposure, statistics & numerical data; Follow-Up Studies; Humans; Particulate Matter, toxicity

Background: The current evidence on health effects of long-term exposure to outdoor airborne black carbon (BC) exposure remains scarce. Objectives: To examine the association between long-term exposure to BC and mortality in a large populationbased French cohort, with 28 years of follow-up. Methods: Data from the GAZEL cohort were collected between 1989 and 2017. Land use regression model with temporal extrapolation was used to estimate yearly BC and PM_{2.5} exposure at the residential addresses from 1989 until censoring for 19,906 participants. Time-varying Cox models with attained age as time-scale was used to estimate the associations between BC and all-cause and cardiovascular mortality, after adjusting for individual and area-level covariates. To handle confounding by PM_{2.5}, we used the residual of BC regressed on PM_{2.5} as an alternate exposure variable. For all-cause mortality, we also examined effect modification by sex, smoking status, BMI and fruit/vegetable intake. Results: The median of 20-year moving average of BC exposure was 2.02 10

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