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Supplemental Material

Mortality Risk and Fine Particulate Air Pollution in a Large, Representative Cohort of U.S. Adults

C. Arden Pope III, Jacob S. Lefler, Majid Ezzati, Joshua D. Higbee, Julian D. Marshall, Sun-Young Kim, Matthew Bechle, Kurtis S. Gilliat, Spencer E. Vernon, Allen L. Robinson, and Richard T. Burnett

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Table S1. Estimated hazard ratios (and 95% CIs) for all-cause, cardiopulmonary, and lung cancer mortality for key variables using the sub-cohort and the full complex CPH model.

Table S2. Results of model sensitivity analysis comparing hazard ratios (and 95% CIs) for full and sub-cohorts, for complex versus basic CPH models, for models with progressively added control variables, and for alternative exposure and survey periods.

Table S3. Results of stratified analysis for the sub-cohort comparing hazard ratios (and 95% CIs) associated with 10 $\mu g/m^3$ $PM_{2.5}$ estimated from the basic CPH model across selected strata of sex, race, age, smoking status, BMI, income, education, marital status, rural/urban, census regions, and survey years. All stratified estimates are adjusted for remaining covariates.

Figure S1. Illustration of approach to estimate back-casted, imputed $PM_{2.5}$ from 1988-1998. Black circles indicate modeled annual mean $PM_{2.5}$ concentrations for the 17 years (1999–2015) with regulatory monitoring data for $PM_{2.5}$ estimated using the universal kriging modeling framework. Black squares indicate modeled annual mean PM_{10} concentrations for the 28 years (1988–2015) with regulatory monitoring data for PM_{10} also estimated using the universal kriging modeling framework. Grey circles indicate the back-casted, imputed $PM_{2.5}$ estimated from 1988-1998 based on modeled PM_{10} and census –tract mean $PM_{2.5}/PM_{10}$ ratios for 1999-2003. This back-casting approach was used for each census tract separately. For simple illustration, this figure presents averages across all census tracts (urban and rural) in the contiguous U.S. (average $PM_{2.5}/PM_{10}$ ratio for 1999-2003 was 0.58).