Supplementary material

Associations of PM_{2.5} with chronic obstructive pulmonary disease in shipyard workers: a cohort study

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Abbreviation list

FEF_{25%}, forced expiratory flow (FEF) during 25% of the forced vital capacity; FEF_{50%}, FEF during 50% of the forced vital capacity; FEF_{75%}, FEF during 75% of the forced vital capacity; FEF_{25%-75%}, FEF between 25% and 75% of the forced vital capacity; FeNO, fractional exhaled nitric oxide; FEV₁, forced expiratory volume in 1 s; FVC, forced vital capacity; PEF, peak expiratory flow; PM_{2.5}, particulate matter (PM) less than 2.5 µm in aerodynamic diameter.

Figure legends

Figure S1. Associations of particulate matter with an aerodynamic diameter less than 2.5 μ m (PM_{2.5}) with fractional exhaled nitric oxide (FeNO), lung function, and blood pressure in overall cohort subjects, healthy subjects, and chronic obstructive pulmonary disease (COPD) subjects.

Data are presented as regression coefficients multiplied by an interquartile range (IQR) increase in PM_{2.5} with the 95% confidence interval (CI). Generalized estimating equations were adjusted for test year, age, work type (office or welding), working duration, smoking status, and protective mask use. Values in bold characters with red color were deemed statistically significant (* p<0.05).

Figure S2. Associations (β coefficient) of particulate matter with an aerodynamic diameter less than 2.5 μ m (PM_{2.5}) deposition in total lung, head and nasal, tracheobronchial, and alveolar regions with forced exhaled nitric oxide (FeNO), lung function, and blood pressure in overall cohort subjects.

Generalized estimating equations were adjusted for test year, age, work type (office or welding), working duration, smoking status, chronic obstructive pulmonary disease (COPD), and protective mask use. Values in bold characters with red color were deemed statistically significant (* p<0.05).



-1.573049 (-0.002, -0.000)* -0.110633 (-0.000,-0.000)* -0.087741 (-0.000,-0.000)* 0.513952 (0.000, 0.001)* -0.249469 (-0.000,-0.000)* -0.093965 (-0.000,-0.000)* -0.207841 (-0.000,-0.000)* -0.109243 (-0.000,-0.000)* -0.060528 (-0.000, -0.000)* -0.004518 (-0.002, 0.002) -0.236930 (-0.002, 0.001)

B Healthy subject group -FeNO -FVC -FEV1 FEV1/FVC Peak expiratory flow -FEF25% 0.105732 (-0.002, 0.003) -Diastolic BP -0.400172 (-0.002, 0.001) -0.003 -0.002 -0.001 0.000 0.001 0.002 0.003





IQR*β coefficient (CI 95%) -1.826605 (-0.002, -0.000)* -0.116647 (-0.000,-0.000)* -0.098809 (-0.000,-0.000)* 0.393489 (0.000, 0.001)* -0.274196 (-0.000,-0.000)* -0.108684 (-0.000,-0.000)* -0.224130 (-0.000,-0.000)* -0.119128 (-0.000,-0.000)* -0.089920 (-0.000, -0.000)*

IQR*β coefficient (CI 95%) -0.699322 (-0.004, 0.001) -0.004260 (-0.000,0.000) -0.007404 (-0.000, 0.000) 0.039716 (-0.000, 0.001) -0.012376 (-0.000, 0.000) -0.004443 (-0.000, 0.000) -0.007601 (-0.000, 0.000) -0.005634 (-0.000, 0.000) -0.003628 (-0.000, 0.000) 0.526370 (-0.009, 0.012) 0.167914 (-0.003, 0.004)

Figure S1



Figure S2