

Supplemental Table S1: Associations between FEV<sub>1</sub> (ml) and selected covariates (per unit increase), from a model for repeated measures using the proc mixed statement in SAS assuming unstructured covariance.

Covariate	Effect size (ml)	95% CI
Age (years)	-29.7	-30.7, -28.7
Height <sup>2</sup> (cm <sup>2</sup> )	0.15	0.154, 0.146
Male (vs female)	578.0	537.6, 618.4
White (vs non-White)	437.3	413.0, 461.6
Smoking		
Current	-77.7	-105.7, -49.7
Past	-24.7	-47.6, -4.5
Missing	-40.0	-69.3, -19.3
Risk score**	-156.9	-182.1, -129.9
Cumulative PM <sub>2.5</sub> (mg/m <sup>3</sup> )	-7.5	-11.4, -3.6

\*Model was also adjusted for individual facility and job grade.

\*\*Risk score was entered in the model log-transformed from its original scale which had a range of (0.5 - 50) with increasing values representing increasing expected health expenditures. In this range a value of 1 represents the median expected expenditures.

Supplemental Table 2: Average Predicted FEV<sub>1</sub> and FVC after 10 years of follow-up under hypothetical interventions and change in 50 multiply imputed datasets for missing smoking.

Intervention	FEV <sub>1</sub>			FVC		
	FEV <sub>1</sub> /height <sup>2</sup> (ml/m <sup>2</sup> )	ΔFEV <sub>1</sub> /height <sup>2</sup> (ml/m <sup>2</sup> )	Range**	FVC/height <sup>2</sup> (ml/m <sup>2</sup> )	ΔVC/height <sup>2</sup> (ml/m <sup>2</sup> )	Range**
Natural Course	1121.6	Referent	Referent	1449.2	Referent	Referent
PM <sub>2.5</sub> ≤0.51 mg/m <sup>3</sup>	1126.1	4.5	0.8, 8.2	1453.0	3.8	-0.7, 8.2
PM <sub>2.5</sub> ≤0.33 mg/m <sup>3</sup>	1130.5	8.9	3.9, 13.9	1457.4	8.2	2.3, 14.1
PM <sub>2.5</sub> ≤0.14 mg/m <sup>3</sup>	1131.9	10.3	4.1, 16.5	1458.1	8.9	1.7, 16.1
PM <sub>2.5</sub> ≤0.05 mg/m <sup>3</sup>	1133.2	11.6	4.2, 19.0	1458.9	9.7	1.2, 18.2
PM <sub>2.5</sub> =0 mg/m <sup>3</sup>	1135.5	13.9	2.8, 25.0	1459.5	10.3	-2.4, 23.0

\* Percentage of predicted values for each of the counterfactual values of FEV<sub>1</sub> and FVC under each intervention are based on percentages estimated using equations by Hankinson et al. (1999).

\*\*Range of difference estimates from the 50 different multiply imputed datasets

Supplemental Table S3: Predicted FEV<sub>1</sub> and FVC after 10 years of follow-up under hypothetical interventions, and change (with 95% CI) compared to the observed natural course, assuming no censoring (due to death or termination of employment).

Intervention	FEV <sub>1</sub>				FVC			
	FEV <sub>1</sub> /height <sup>2</sup> (ml/m <sup>2</sup> )	Percent Predicted*	ΔFEV <sub>1</sub> /height <sup>2</sup> (ml/m <sup>2</sup> )	95 % CI	FVC/height <sup>2</sup> (ml/m <sup>2</sup> )	Percent Predicted*	ΔVC/height <sup>2</sup> (ml/m <sup>2</sup> )	95 % CI
Natural Course	1083.2	90.9	Referent	Referent	1411.9	91.5	Referent	Referent
PM <sub>2.5</sub> ≤0.51 mg/m <sup>3</sup>	1087.7	91.3	4.5	1.2, 7.9	1415.9	91.7	4.0	-0.1, 8.0
PM <sub>2.5</sub> ≤0.33 mg/m <sup>3</sup>	1091.9	91.6	8.7	4.1, 13.4	1420.0	92.0	8.1	2.6, 13.6
PM <sub>2.5</sub> ≤0.14 mg/m <sup>3</sup>	1093.9	91.8	10.7	4.8, 16.7	1421.5	92.1	9.4	2.6, 16.5
PM <sub>2.5</sub> ≤0.05 mg/m <sup>3</sup>	1095.5	91.9	12.3	5.2, 19.5	1422.5	92.2	10.6	2.3, 18.8
PM <sub>2.5</sub> =0 mg/m <sup>3</sup>	1099.9	92.3	16.7	5.8, 27.6	1425.0	92.4	13.1	0.6, 25.6

\*Percentage of predicted values for each of the counterfactual values of FEV<sub>1</sub> and FVC under each intervention are based on percentages estimated using equations by Hankinson et al. (1999).