Supplemental Material

Association Between Decreased Ambient $PM_{2.5}$ and Kidney Disease Incidence: Evidence from the China Health and Retirement Longitudinal Study

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Table S1. Association between $PM_{2.5}$ concentration and KD incidence further adjusted for cardiovascular disease, diabetes and hypertension.

Model	3-year average $PM_{2.5}$				2-year average $PM_{2.5}$			
	Model 1		Model 2		Model 1		Model 2	
	HR (95% CI)	*p*-Value	HR (95% CI)	*p*-Value	HR (95% CI)	*p*-Value	HR (95% CI)	*p*-Value
Per 5 μg/m³ decrease	0.858 (0.842, 0.874)	< 0.001	0.848 (0.833, 0.864)	< 0.001	0.857 (0.841, 0.874)	< 0.001	0.844 (0.828, 0.861)	< 0.001
Quartile 1	0.435 (0.374, 0.507)	< 0.001	0.393 (0.335, 0.461)	< 0.001	0.459 (0.393, 0.535)	< 0.001	0.414 (0.353, 0.485)	< 0.001
Quartile 2	0.614 (0.534, 0.707)	< 0.001	0.583 (0.505, 0.673)	< 0.001	0.630 (0.547, 0.726)	< 0.001	0.562 (0.484, 0.652)	< 0.001
Quartile 3	0.866 (0.759, 0.989)	0.033	0.858 (0.750, 0.981)	0.025	0.958 (0.839, 1.094)	0.528	0.972 (0.851, 1.111)	0.681
Quartile 4	Ref		Ref		Ref		Ref	
Trend test		< 0.001		< 0.001		< 0.001		< 0.001

Abbreviations: $PM_{2.5}$, fine particulate matter; KD, kidney disease.

Note: Model 1 adjusted for age and gender. Model 2 further adjusted for marital status, education, smoking, alcohol consumption, residence, cardiovascular disease, diabetes and hypertension.

Table S2. Association between $PM_{2.5}$ concentration and KD incidence when excluding participants with cardiovascular disease, diabetes and hypertension.

Exclusion	3-year average $PM_{2.5}$				2-year average $PM_{2.5}$			
	Model 1		Model 2		Model 1		Model 2	
	HR (95% CI)	*p*-Value	HR (95% CI)	*p*-Value	HR (95% CI)	*p*-Value	HR (95% CI)	*p*-Value
Non-hypertension	0.845 (0.819, 0.870)	< 0.001	0.843 (0.818, 0.869)	< 0.001	0.844 (0.818, 0.871)	< 0.001	0.843 (0.817, 0.870)	< 0.001
Non-diabetes	0.858 (0.837, 0.880)	< 0.001	0.858 (0.836, 0.880)	< 0.001	0.858 (0.835, 0.881)	< 0.001	0.857 (0.835, 0.880)	< 0.001
Non-CVD	0.838 (0.815, 0.861)	< 0.001	0.837 (0.814, 0.860)	< 0.001	0.837 (0.813, 0.861)	< 0.001	0.836 (0.812, 0.860)	< 0.001
Disease-free	0.831 (0.803, 0.860)	< 0.001	0.829 (0.801, 0.859)	< 0.001	0.831 (0.802, 0.862)	< 0.001	0.829 (0.800, 0.860)	< 0.001

Abbreviations: $PM_{2.5}$, fine particulate matter; KD, kidney disease.

Note: Model 1 adjusted for age and gender. Model 2 further adjusted for marital status, education, smoking, alcohol consumption and residence. Specifically, 7,816 non-hypertension, 10,057 non-diabetes, 9,459 non-CVD and 6,720 participants at baseline were included for these analyses after excluding the participants with missing values.

Table S3. Association between 1-year average $PM_{2.5}$ concentration and KD incidence

Model	1-year average $PM_{2.5}$			
	Model 1		Model 2	
	HR (95% CI)	*p*-Value	HR (95% CI)	*p*-Value
Per 5 μg/m³ decrease	0.857 (0.840, 0.875)	< 0.001	0.858 (0.841, 0.876)	< 0.001
Quartile 1	0.447 (0.383, 0.521)	< 0.001	0.444 (0.381, 0.519)	< 0.001
Quartile 2	0.707 (0.616, 0.812)	< 0.001	0.703 (0.612, 0.807)	< 0.001
Quartile 3	0.885 (0.773, 1.012)	0.074	0.885 (0.773, 1.013)	0.077
Quartile 4	Ref		Ref	
Trend test		< 0.001		< 0.001

Abbreviations: $PM_{2.5}$, fine particulate matter; KD, kidney disease.

Note: Model 1 adjusted for age and gender. Model 2 further adjusted for marital status, education, smoking, alcohol consumption and residence.