



1 *Supplementary Material*

2 **Association between Airborne Fine Particulate**
3 **Matter and Residents' Cardiovascular Diseases,**
4 **Ischemic Heart Disease and Cerebral vascular**
5 **Disease Mortality in Area with Lighter Air Pollution**
6 **in China**

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9 *3.5. Analysis of GAM*

10 Based on the control of long-term trend, seasonal trend, effect of DOW, effect of PH of residents'
11 mortality, and daily average temperature and daily average RH, single pollutant model (no
12 adjustment of pollutants) was used to calculate the RR value and its 95%CI lag0-lag5, lag01-lag04 of
13 PM_{2.5} daily average concentration versus residents' mortality from CVD. The results show positive
14 correlation between PM_{2.5} daily average concentration with lag0-lag5, lag01-lag04 and CVD
15 mortality; positive correlation between PM_{2.5} daily average concentration with lag0, lag1, lag2, lag5,
16 lag01-lag04 and IHD mortality; positive correlation between PM_{2.5} daily average concentration with
17 lag0, lag1, lag3, lag4, lag5, lag01-lag04 and EVD mortality (see Figure S1-1). After controlling CO or
18 O₃ separately, the results of double-pollutant models show positive correlation between PM_{2.5} daily
19 average concentration with lag0-lag5, lag01-lag04 and CVD mortality. The results were consistent
20 with no adjustment of CO and O₃. The effects maintain stability after controlling CO or O₃. After
21 controlling CO, the results show positive correlation between PM_{2.5} daily average concentration with
22 lag0-lag5, lag01-lag04 and IHD mortality; positive correlation between PM_{2.5} daily average
23 concentration with lag0, lag1, lag3, lag4, ag5, lag01-lag04 and EVD mortality (see Figure S1-2). After
24 controlling O₃, the results show positive correlation between PM_{2.5} daily average concentration with
25 lag0, lag1, lag2, lag5, lag01-lag04 and IHD mortality; positive correlation between PM_{2.5} daily average
26 concentration with lag1, lag3, lag4, lag5, lag01-lag04 and EVD mortality (see Figure S1-3).

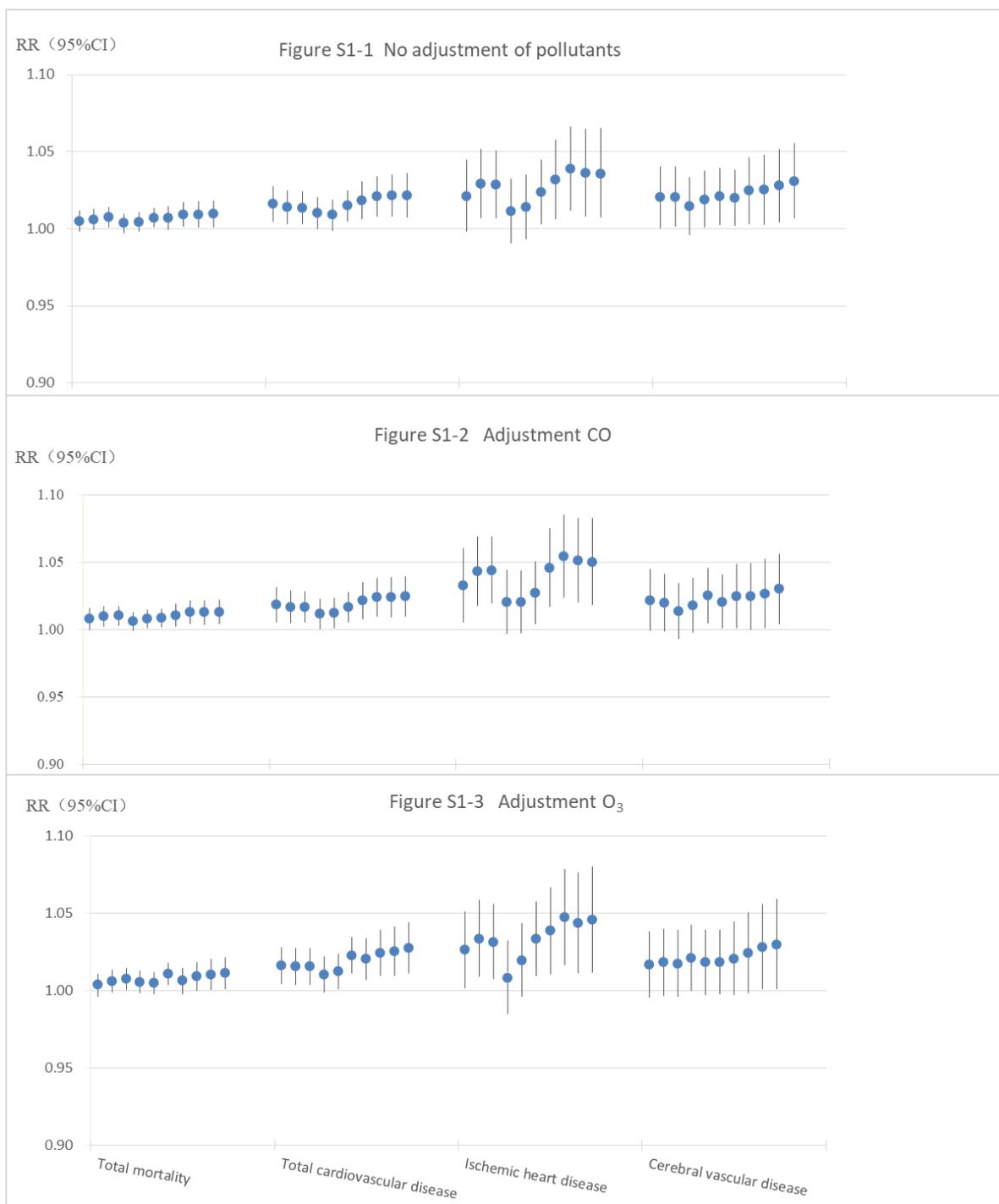


Figure S1. RR and 95% CI of mortality per 10µg/m³ increase in PM_{2.5} concentration with different lags 0–5 days prior to mortality (lag0–lag5) and moving averages from day 0 to day prior to mortality (lag01–lag04).

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35 **Table S1.** People's Republic of China Ministry of Environmental Protection, Atmospheric
 36 environmental quality standards (GB3095-2012)

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Pollutant	Mean Time	Concentration Limit		Unit
		grade1 criterion	grade2 criterion	
SO ₂	Annual mean	20	60	μg/m ³
	24-hour average	50	150	
	1-hour average	150	500	
NO ₂	Annual mean	40	40	μg/m ³
	24-hour average	80	80	
	1-hour average	200	200	
CO	24-hour average	4000	4000	μg/m ³
	1-hour average	10000	10000	
O ₃	8-hour average	100	160	μg/m ³
	1-hour average	160	200	
PM ₁₀	Annual mean	40	70	μg/m ³
	24-hour average	50	150	
PM _{2.5}	Annual mean	15	35	μg/m ³
	24-hour average	35	75	

38 According to < People's Republic of China Ministry of Environmental Protection, Atmospheric environmental
 39 quality standards (GB3095-2012) >, Natural reserves, scenic spots and other areas requiring special protection
 40 apply grade1 criterion. Residential areas, mixed residential areas for commercial transportation, cultural areas,
 41 industrial areas and rural areas apply grade2 criterion.