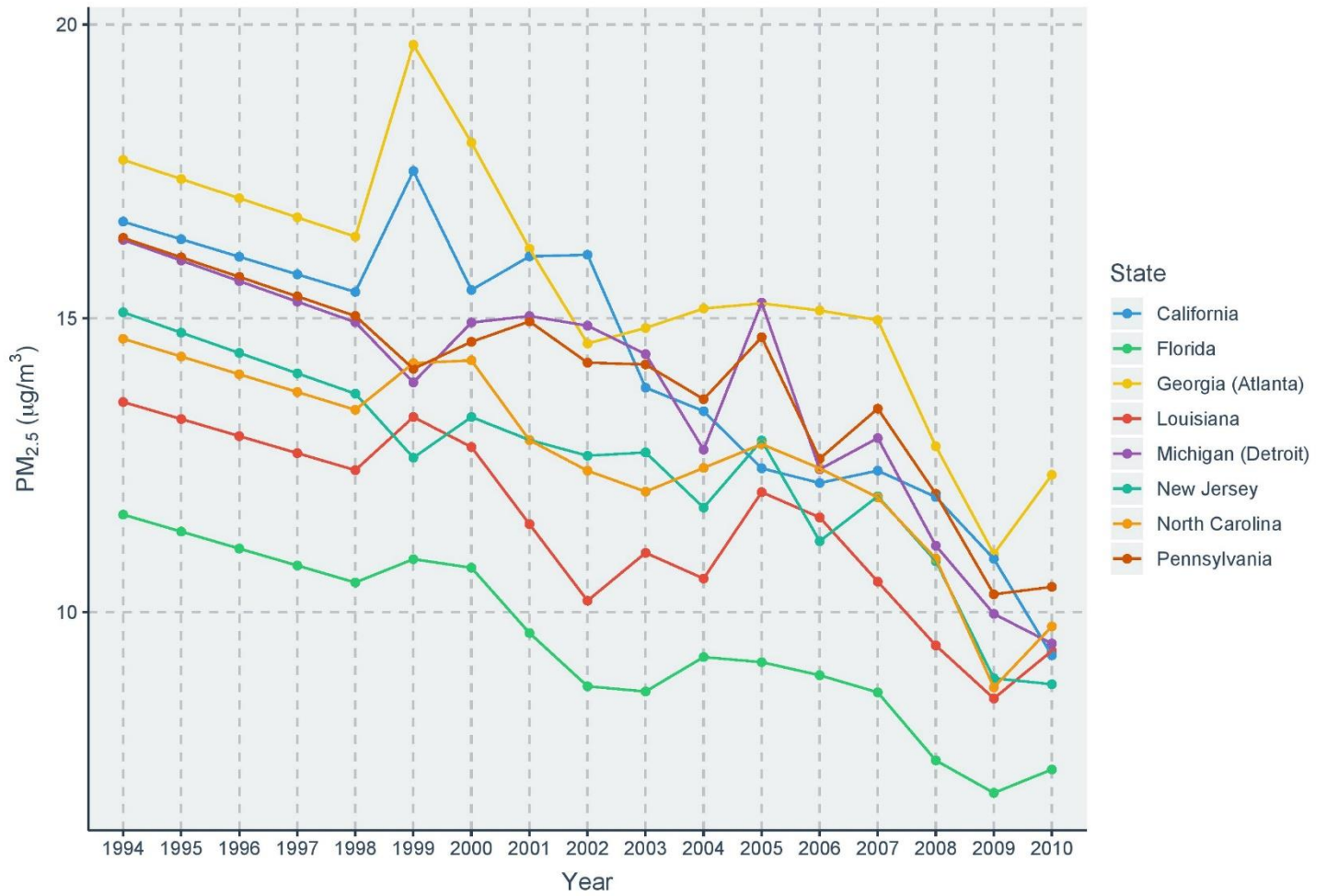


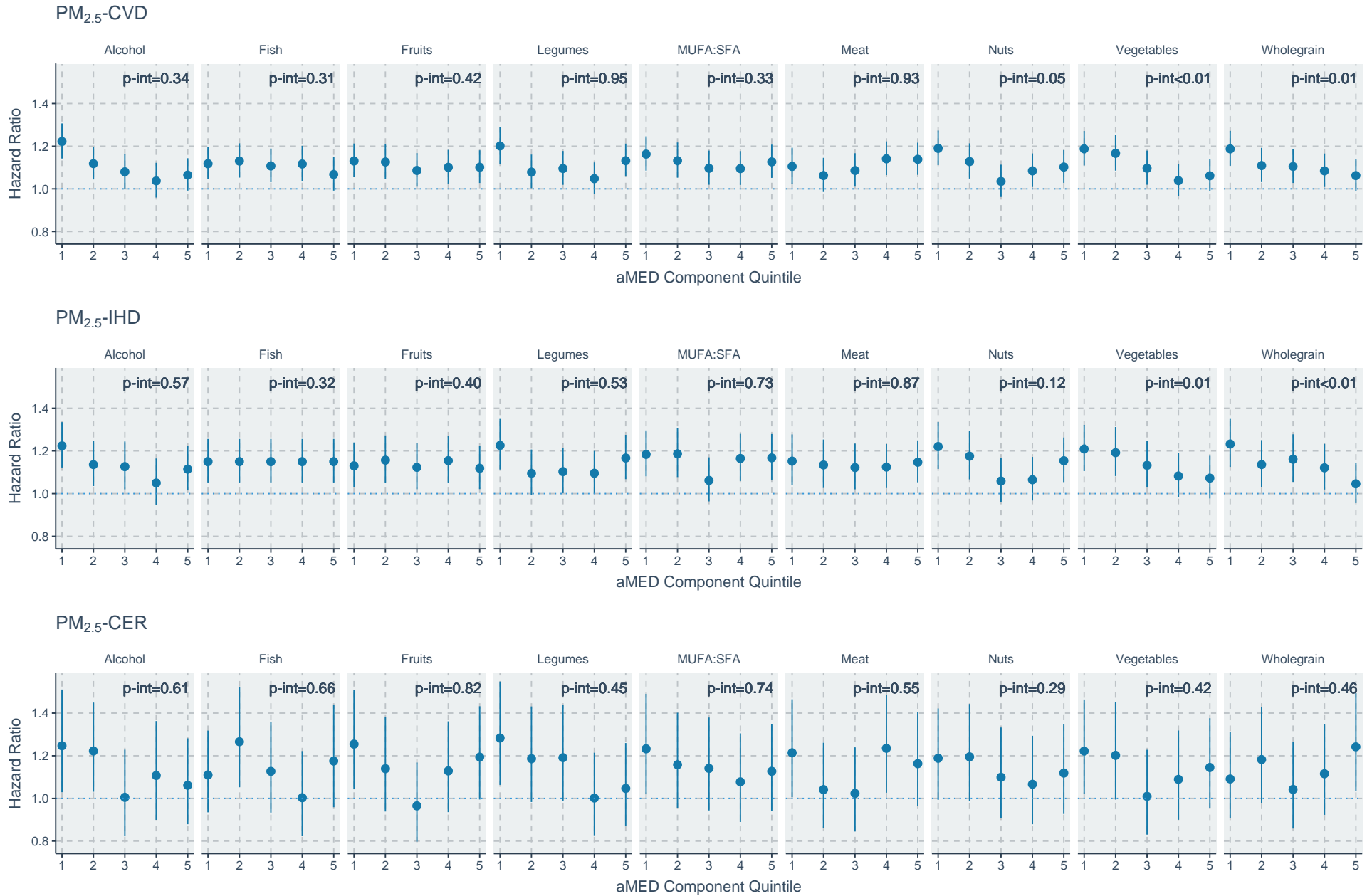
SUPPLEMENTAL MATERIAL

Supplemental Figure 1. Average annual concentration levels for PM_{2.5} and NO₂ over time (1994-2010) by NIH-AARP study state

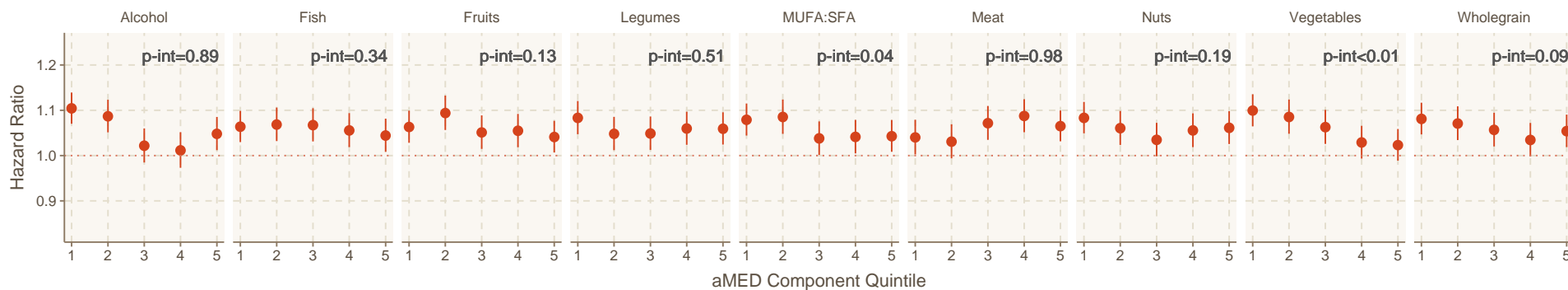




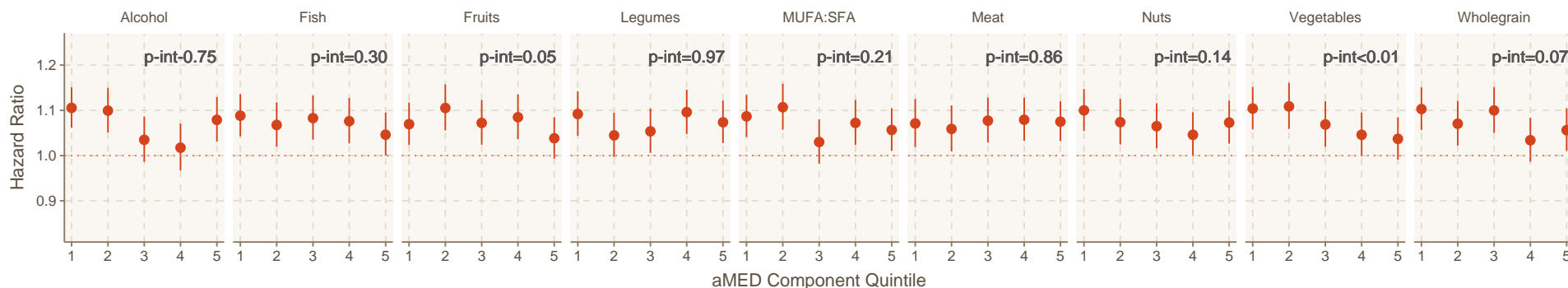
Supplemental Figure 2. HR and 95% CI associated with air pollutants by quintiles of alternative Mediterranean Diet Index (aMED) score components



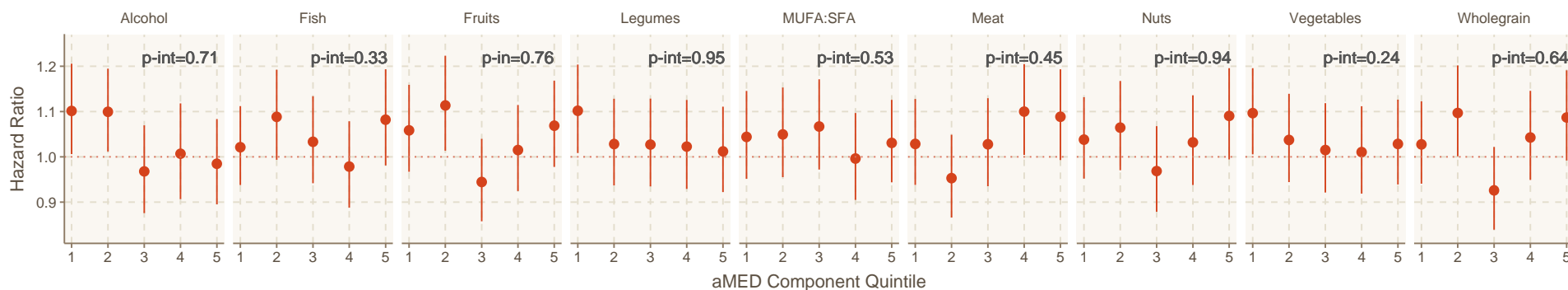
NO₂-CVD



NO₂-IHD



NO₂-CER



Adjusted for sex and location as strata; and age (time-varying), race, BMI, education, smoking, marriage, and remaining dietary components at individual-level; and median income and % with high school education at census-tract level.

CVD indicates cardiovascular disease; IHD, ischemic heart disease; CER, cerebrovascular disease; and CAR, cardiac arrests

Supplemental Table 1: Results for the penalized ridge regression model, adjusting for both PM_{2.5} and NO₂ within the same model

	PM _{2.5}	NO ₂
Cause of Death	HR (95% CI)*	HR (95% CI)*
Cardiovascular Disease	1.05 (1.01-1.09)	1.03 (1.01-1.05)
Ischemic Heart Disease	1.06 (1.00-1.11)	1.04 (1.05-1.06)
Cerebrovascular Disease	1.08 (0.98-1.20)	1.01 (0.96-1.05)

*Adjusted for sex and location as strata; and age (time-varying), race, BMI, education, smoking, marriage, and alternative Mediterranean Diet Index (aMED) at individual-level; and median income and % with high school education at census-tract level.

Supplemental Table 2. Cause-specific HR and 95% CI (per $\mu\text{g}/\text{m}^3$ for $\text{PM}_{2.5}$; per 10 ppb for NO_2) associated with air pollutants by quintiles of alternative Mediterranean Diet Index (aMED) scores

Cause of Death	aMED Quintile	Deaths (n)	$\text{PM}_{2.5}$			NO_2		
			HR*	95% CI	p-int	HR*	95% CI	p-int
CVD	1	8383	1.20	1.12-1.29	<0.01	1.10	1.06-1.13	<0.01
	2	7362	1.21	1.12-1.30		1.10	1.06-1.14	
	3	8191	1.14	1.07-1.23		1.08	1.05-1.12	
	4	7494	1.11	1.03-1.19		1.03	0.99-1.06	
	5	8102	1.01	0.94-1.08		1.01	0.97-1.04	
IHD	1	4674	1.19	1.09-1.31	<0.01	1.10	1.05-1.15	<0.01
	2	4066	1.28	1.16-1.41		1.12	1.07-1.18	
	3	4622	1.19	1.08-1.30		1.09	1.04-1.14	
	4	4274	1.18	1.07-1.30		1.06	1.01-1.11	
	5	4693	1.02	0.93-1.12		1.02	0.97-1.06	
CER	1	1171	1.26	1.05-1.52	<0.01	1.08	0.99-1.18	0.01
	2	1053	1.23	1.01-1.49		1.07	0.97-1.17	
	3	1138	1.31	1.09-1.57		1.12	1.02-1.23	
	4	1049	1.06	0.88-1.29		1.01	0.92-1.11	
	5	1181	0.95	0.79-1.14		0.93	0.85-1.02	
CAR	1	1454	1.11	0.93-1.33	0.09	1.06	0.97-1.15	0.13
	2	1305	1.08	0.89-1.29		1.06	0.97-1.16	
	3	1441	0.95	0.78-1.13		1.02	0.93-1.11	
	4	1282	0.93	0.78-1.12		0.97	0.88-1.06	
	5	1329	0.95	0.79-1.13		0.99	0.92-1.09	

*Adjusted for sex and location as strata; and age (time-varying), race, BMI, education, smoking, and marriage at individual-level; and median income and % with high school education at census-tract level.

CVD indicates cardiovascular disease; IHD, ischemic heart disease; CER, cerebrovascular disease; CAR, cardiac arrests

Supplemental Table 3: Air pollution-mortality associations and p-values for interaction test between air pollutant and alternative Mediterranean Diet Index (aMED) variable across different groups of BMI, education, and smoking

	Cardiovascular Disease (CVD)					Ischemic Heart Disease (IHD)					Cerebrovascular Disease (CER)				
	Deaths (n)	PM _{2.5} -CVD		NO ₂ -CVD		Deaths (n)	PM _{2.5} -IHD		NO ₂ -IHD		Deaths (n)	PM _{2.5} -CER		NO ₂ -CER	
		HR (95% CI)*	aMED p-int	HR (95% CI)*	aMED p-int		HR (95% CI)*	aMED p-int	HR (95% CI)*	aMED p-int		HR (95% CI)*	aMED p-int	HR (95% CI)*	aMED p-int
BMI															
<25 (N=189,047)	11,196	1.15 (1.06- 1.24)	<0.01	1.08 (1.04- 1.12)	<0.01	5,967	1.24 (1.11- 1.37)	0.28	1.12 (1.07- 1.18)	0.05	1,889	0.98 (0.81- 1.19)	0.05	0.97 (0.97- 1.20)	0.04
25-30 (N=226,854)	15,918	1.17 (1.10- 1.25)	<0.01	1.07 (1.03- 1.10)	<0.01	9,251	1.21 (1.11- 1.32)	0.05	1.08 (1.03- 1.12)	0.09	2,238	1.29 (1.07- 1.54)	0.18	1.07 (0.98- 1.16)	0.62
>=30 (N=118,149)	11,090	1.06 (0.98- 1.15)	0.28	1.05 (1.01- 1.08)	0.15	6,393	1.02 (0.92- 1.14)	0.15	1.03 (0.98- 1.08)	0.07	1,257	1.20 (0.95- 1.50)	0.29	1.08 (0.97- 1.20)	0.14
Education Level															
High school or less (N=321,510)	25,594	1.11 (1.03- 1.20)	<0.01	1.05 (1.01- 1.09)	<0.01	14,483	1.17 (1.09- 1.26)	0.02	1.08 (1.05- 1.12)	0.01	2,228	1.15 (0.96- 1.38)	0.27	1.06 (0.99- 1.13)	0.14
College or greater (N=210,745)	12,319	1.13 (1.07- 1.19)	0.03	1.06 (1.04- 1.09)	0.03	6,938	1.16 (1.05- 1.28)	0.28	1.07 (1.02- 1.12)	0.15	3,137	1.10 (0.95- 1.27)	<0.01	0.99 (0.91- 1.08)	0.01
Smoking History															
Never (N=191,039)	9,737	1.17 (1.07- 1.27)	<0.01	1.07 (1.03- 1.11)	<0.01	5,102	1.21 (1.08- 1.36)	<0.1	1.10 (1.04- 1.16)	0.03	1,623	1.23 (1.01- 1.51)	0.74	1.05 (0.95- 1.15)	0.71
Ever (N=271,381)	21,291	1.12 (1.06- 1.19)	<0.01	1.07 (1.04- 1.10)	<0.01	12,392	1.15 (1.07- 1.24)	0.23	1.08 (1.04- 1.12)	0.02	2,823	1.13 (0.96- 1.32)	0.01	1.05 (0.98- 1.13)	<0.01
Current (N=65,463)	6,604	1.08 (0.98- 1.19)	0.08	1.04 (0.99- 1.09)	0.09	3,740	1.13 (0.99- 1.28)	0.50	1.07 (0.99- 1.13)	0.32	877	1.06 (0.81- 1.39)	0.08	1.03 (0.91- 1.16)	0.08

*Adjusted for sex and location as strata; and age (time-varying), race, BMI, education, smoking, marriage at individual-level; and median income and % with high school education at census-tract level

Supplemental Table 4: Air pollution-mortality associations and p-values for interaction between air pollutant and alternative Mediterranean Diet Index (aMED) variable across quartiles of census-tract population density

Population Density	PM _{2.5} Avg (SD)	NO ₂ Avg (SD)	Deaths (n)	Cardiovascular Disease (CVD)				Ischemic Heart Disease (IHD)				Cerebrovascular Disease (CER)					
				PM _{2.5} -CVD		NO ₂ -CVD		PM _{2.5} -IHD		NO ₂ -IHD		PM _{2.5} -CER		NO ₂ -CER			
				HR (95% CI)*	aMED p-int	HR (95% CI)*	aMED p-int	HR (95% CI)*	aMED p-int	HR (95% CI)*	aMED p-int	HR (95% CI)*	aMED p-int	HR (95% CI)*	aMED p-int		
Quartile 1 (N=137,212)	11.0 (2.6)	7.7 (3.6)	9,871	1.05 (0.94-1.17)	0.12	1.08 (0.99-1.18)	0.06	5,557	1.09 (0.94-1.27)	0.39	1.12 (1.01-1.25)	0.17	1,419	1.25 (0.94-1.68)	<0.01	1.12 (0.89-1.40)	0.04
Quartile 2 (N=137,211)	12.5 (2.7)	12.2 (4.6)	9,295	0.97 (0.87-1.09)	0.82	1.02 (0.96-1.09)	0.18	5,204	1.07 (0.92-1.24)	0.99	1.11 (1.01-1.21)	0.72	1,343	0.78 (0.57-1.06)	0.58	0.87 (0.73-1.05)	0.33
Quartile 3 (N=137,211)	13.4 (3.0)	16.0 (5.6)	9,857	1.16 (1.05-1.29)	0.04	1.07 (1.01-1.14)	0.05	5,627	1.15 (1.00-1.31)	0.29	1.06 (0.99-1.15)	0.27	1,385	1.24 (0.95-1.61)	0.39	1.16 (1.00-1.35)	0.10
Quartile 4 (N=137,211)	15.0 (3.0)	22.6 (6.8)	10,509	1.19 (1.09-1.29)	0.01	1.05 (1.01-1.09)	0.01	5,941	1.24 (1.10-1.39)	0.06	1.08 (1.02-1.13)	0.06	1,445	1.31 (1.04-1.65)	0.38	1.02 (0.92-1.14)	0.35

*Adjusted for sex and location as strata; and age (time-varying), race, BMI, education, smoking, marriage at individual-level; and median income and % with high school education at census-tract level

Supplemental Table 5: E-values for cardiovascular disease causes of mortality associated with long-term exposure to PM_{2.5} and NO₂

	PM _{2.5}	NO ₂
Cause of Death	E-v alue for point estimate (for CI)	E-v alue for point estimate (for CI)
Cardiovascular Disease	1.51 (1.37)	1.31 (1.24)
Ischemic Heart Disease	1.59 (1.43)	1.37 (1.24)
Cerebrovascular Disease	1.57 (1.21)	1.24 (1.00)