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Supplemental Material

Long-Term Exposure to Air Pollution and Incidence of Myocardial Infarction: A Danish Nurse Cohort Study

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Table S9. Effect modification of the association between residential $PM_{2.5}$ concentration (modeled as a continuous variable, 1-year mean, per IQR increase) and both overall and fatal incident MI in the Danish Nurse Cohort.

Figure S1. Mean annual residential exposure levels for $PM_{2.5}$, PM_{10}, NO_2, and NO_x throughout the study period (1993-2015).

Supplemental Table S1. Descriptive statistics for female nurses from the Danish Nurse Cohort at year of cohort entry in 1993 or 1999, according to study inclusion exclusion status.

	Total N = 28,731	Included N = 22,882	Excluded N = 5,849
MI, n (%)			
Prevalent	295 (1.0)	0 (0.0)	295 (5.0)
Incident	952 (3.3)	641 (2.8)	311 (5.3)
Never	27,484 (95.7)	22,241 (97.2)	5,243 (89.6)
Fatal MI, n (%)			
No	28,518 (99.3)	22,761 (99.5)	5,757 (98.4)
Yes	213 (0.7)	121 (0.5)	92 (1.6)
Age, mean (SD)	53.9 (8.5)	52.8 (7.7)	58.0 (10.2)
Body mass index (kg/m^2), mean (SD)	23.7 (3.5)	23.7 (3.7)	23.7 (3.5)
Body mass index (kg/m^2), n (%)			
Underweight ($<$ 18.5)	755 (2.7)	553 (2.4)	202 (3.7)
Normal weight (18.5-25)	19,488 (68.7)	15,820 (69.1)	3,668 (66.8)
Overweight (25-30)	6,535 (23.0)	5,214 (22.8)	1,321 (24.1)
Obese ($\geq$ 30)	1,594 (5.6)	1,295 (5.7)	299 (5.4)
Smoking status, n (%)			
Never	9,437 (34.0)	8,224 (35.9)	1,213 (24.8)
Previous	8,496 (30.6)	6,877 (30.1)	1,619 (33.1)
Current	9,833 (35.4)	7,781 (34.0)	2,052 (42.0)
Pack years, n (%)			
Never smoked	9,437 (35.5)	8,224 (35.9)	1,213 (32.5)
$\leq$ 10	7,377 (27.7)	6,458 (28.2)	919 (24.6)
11 - 20	4,413 (16.6)	3,723 (16.3)	690 (18.5)
$>$ 20	5,384 (20.2)	4,477 (19.6)	907 (24.3)
Alcohol consumption, n (%)			
None (0 drinks/week)	4,600 (16.5)	3,426 (15.0)	1,174 (23.5)
Moderate (1-15 drinks/week)	16,980 (60.9)	14,210 (62.1)	2,770 (55.5)
Heavy ($>$ 15 drinks/week)	6,289 (22.6)	5,246 (22.9)	1,043 (20.9)
Physical activity, n (%)			
Low	2,053 (7.2)	1,454 (6.4)	599 (10.9)
Medium	18,818 (66.3)	15,273 (66.7)	3,545 (64.6)
High	7,499 (26.4)	6,155 (26.9)	1,344 (24.5)
Fruit consumption, n (%)			
Rarely	1,056 (3.7)	828 (3.6)	228 (4.2)
Few times per week	7,998 (28.3)	6,516 (28.5)	1,482 (27.5)
Daily or several times per day	19,219 (68.0)	15,538 (67.9)	3,681 (68.3)
Avoids fatty meat, n (%)			
No	2,914 (10.2)	2,123 (9.3)	791 (13.8)
Yes	25,690 (89.8)	20,759 (90.7)	4,931 (86.2)
Hypertension[a], n (%)			
No	24,774 (86.4)	20,054 (87.6)	4,720 (81.3)
Yes	3,912 (13.6)	2,828 (12.4)	1,084 (18.7)
Diabetes[a], n (%)			
No	28,095 (98.7)	22,628 (98.9)	5,467 (97.8)
Yes	376 (1.3)	254 (1.1)	122 (2.2)
Hormone therapy use, n (%)			
Never	20,353 (72.1)	16,677 (72.9)	3,676 (68.8)
Past	2,951 (10.5)	2,236 (9.8)	715 (13.4)
Current	4,920 (17.4)	3,969 (17.3)	951 (17.8)

Oral contraceptive use, n (%)			
Never	12,358 (43.3)	9,140 (39.9)	3,218 (56.8)
Ever	16,193 (56.7)	13,742 (60.1)	2,451 (43.2)
Menopausal status			
Premenopausal	13,375 (46.6)	11,504 (50.3)	1,871 (32.0)
Postmenopausal	15,356 (53.4)	11,378 (49.7)	3,978 (68.0)
Employment status, n (%)			
Actively working	21,240 (75.7)	18,305 (80.0)	2,935 (56.7)
Home-maker	525 (1.9)	407 (1.8)	118 (2.3)
Retired	5,863 (20.9)	3,808 (16.6)	2,055 (39.7)
Unemployed/rehabilitation	192 (0.7)	149 (0.7)	43 (0.8)
Other	242 (0.9)	213 (0.9)	29 (0.6)
Marital status, n (%)			
Married	19,883 (69.8)	16,262 (71.1)	3,621 (64.6)
Separated	459 (1.6)	388 (1.7)	71 (1.3)
Divorced	3,130 (11.0)	2,593 (11.3)	537 (9.6)
Single	2,918 (10.2)	2,210 (9.7)	708 (12.6)
Widowed	2,094 (7.4)	1,429 (6.2)	665 (11.9)
Urbanization level, n (%)			
Rural	11,655 (41.8)	9,428 (41.2)	2,227 (44.7)
Provincial	12,045 (43.2)	9,973 (43.6)	2,072 (41.6)
Urban	4,167 (15.0)	3,481 (15.2)	686 (13.8)
Average municipality income[b] (DKK), mean (SD)	164,263.5 (24,569.8)	164,487.4 (24,855.9)	163,235.8 (23,186.1)
Air pollution levels at cohort entry (1-year mean)[c]			
$PM_{2.5}$ levels ($\mu g/m^3$), mean (SD)	19.8 (3.6)	19.6 (3.6)[c]	20.4 (3.4)[d]
PM_{10} levels ($\mu g/m^3$), mean (SD)	23.6 (3.9)	23.5 (3.9)[c]	24.5 (3.6)[d]
NO_2 levels ($\mu g/m^3$), mean (SD)	12.7 (8.1)	12.6 (8.1)[c]	12.7 (8.2)[d]
NO_x levels ($\mu g/m^3$), mean (SD)	19.2 (24.4)	19.1 (24.4)[c]	19.6 (24.6)[d]
Road traffic noise levels at cohort entry (1-year mean)[e]			
L_{den}, (dB), mean (SD)	52.8 (8.1)	52.8 (8.2)[g]	53.0 (8.1)[f]

Note: Myocardial infarction (MI); standard deviation (SD); Danish Crowns (DKK); Particulate matter with an aerodynamic diameter of < 2.5 $\mu g/m^3$ ($PM_{2.5}$), <10 $\mu g/m^3$ (PM_{10}); Nitrogen dioxide (NO_2); Nitrogen oxides (NO_x); Joint expression of day (L_d; 07:00-19:00 hours (h)), evening (L_e; 19:00-22:00 h), and night (L_n; 22:00-07:00 h) road traffic noise levels, with 5 and 10 dB penalties added to the evening and night estimates, respectively (L_{den})

[a]Self-reported (diagnosis/medication for).
[b]in 1993
[c]Among 21,403 participants with available air pollution data at the year of cohort entry.
[d]Among 4,392 participants with available air pollution data at the year of cohort entry
[e]Annual weighted (5 dB penalty added to l_e and 10 dB penalty added to l_n) mean.
[f]Among 5,756 participants with available road traffic noise data at the year of cohort entry.
[g]Among 22,715 participants with available road traffic noise data at the year of cohort entry.

Supplemental Table S2. Correlations between road traffic noise and air pollutants (annual mean) at the year of cohort entry in 1993 or 1999, overall and according to urbanicity.

	L_{den}	$PM_{2.5}$	PM_{10}	NO_2	NO_X
L_{den}	1.0000				
$PM_{2.5}$	0.3593	1.0000			
PM_{10}	0.2434	0.8542	1.0000		
NO_2	0.6062	0.6513	0.5200	1.0000	
NO_x	0.4944	0.5731	0.5473	0.9216	1.0000

	L_{den}	$PM_{2.5}$	PM_{10}	NO_2	NO_X
Rural areas					
L_{den}	1.0000				
$PM_{2.5}$	0.1837	1.0000			
PM_{10}	0.1468	0.7620	1.0000		
NO_2	0.5146	0.4631	0.2988	1.0000	
NO_x	0.4813	0.3427	0.2920	0.9305	1.0000
Provincial areas					
L_{den}	1.0000				
$PM_{2.5}$	0.2122	1.0000			
PM_{10}	0.1988	0.9071	1.0000		
NO_2	0.5611	0.5017	0.4662	1.0000	
NO_x	0.4988	0.4368	0.4737	0.9342	1.0000
Urban areas					
L_{den}	1.0000				
$PM_{2.5}$	0.3342	1.0000			
PM_{10}	0.3779	0.9927	1.0000		
NO_2	0.5604	0.7726	0.8309	1.0000	
NO_x	0.5202	0.7521	0.8188	0.9567	1.0000

Note: Particulate matter with an aerodynamic diameter of < 2.5 μg/m^3 ($PM_{2.5}$), <10 μg/m^3 (PM_{10}); Nitrogen dioxide (NO_2); Nitrogen oxides (NO_x); Joint expression of day (L_d; 07:00-19:00 hours (h)), evening (L_e; 19:00-22:00 h), and night (L_n; 22:00-07:00 h) road traffic noise levels, with 5 and 10 dB penalties added to the evening and night estimates, respectively (L_{den}).

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Supplemental Table S3. Secular trends in the correlations between road traffic noise and air pollutants (annual mean) at the year of cohort entry in 1993 or 1999.

	L_{den}	$PM_{2.5}$	PM_{10}	NO_2	NO_x
1990					
L_{den}	1.0000				
$PM_{2.5}$	0.4655	1.0000			
PM_{10}	0.3104	0.7122	1.0000		
NO_2	0.6121	0.7471	0.5847	1.0000	
NO_x	0.5092	0.6677	0.6406	0.9317	1.0000
1995					
L_{den}	1.0000				
$PM_{2.5}$	0.4766	1.0000			
PM_{10}	0.3352	0.7310	1.0000		
NO_2	0.6186	0.7687	0.6140	1.0000	
NO_x	0.5101	0.6932	0.6899	0.9203	1.0000
2000					
L_{den}	1.0000				
$PM_{2.5}$	0.4663	1.0000			
PM_{10}	0.3400	0.7156	1.0000		
NO_2	0.6158	0.7431	0.6210	1.0000	
NO_x	0.5180	0.6580	0.6891	0.9293	1.0000
2005					
L_{den}	1.0000				
$PM_{2.5}$	0.4405	1.0000			
PM_{10}	0.3169	0.6792	1.0000		
NO_2	0.6203	0.7076	0.5560	1.0000	
NO_x	0.5359	0.6118	0.6330	0.9244	1.0000
2010					
L_{den}	1.0000				
$PM_{2.5}$	0.4450	1.0000			
PM_{10}	0.3408	0.6824	1.0000		
NO_2	0.6195	0.7055	0.6067	1.0000	
NO_x	0.5417	0.6148	0.6843	0.9365	1.0000
2014					
L_{den}	1.0000				
$PM_{2.5}$	0.4484	1.0000			
PM_{10}	0.2767	0.6034	1.0000		
NO_2	0.6153	0.7332	0.5235	1.0000	
NO_x	0.5490	0.6720	0.6358	0.9433	1.0000

Note: Particulate matter with an aerodynamic diameter of < 2.5 µg/m^3 ($PM_{2.5}$), <10 µg/m^3 (PM_{10}); Nitrogen dioxide (NO_2); Nitogen oxides (NO_x); Joint expression of day (L_d; 07:00-19:00 hours (h)), evening (L_e; 19:00-22:00 h), and night (L_n; 22:00-07:00 h) road traffic noise levels, with 5 and 10 dB penalties added to the evening and night estimates, respectively (L_{den}).

Supplemental Table S4. Associations between long-term exposure to air pollution and both overall and fatal incident MI in the Danish Nurse Cohort.

	Model 1[a]	Model 2[b]	Model 4 (Model 2[b] + BMI)	Model 5 (Model 2[b] + Diabetes)	Model 6 (Model 2[b] + Hypertension)	Model 7 (Model 2[b] + Municipality income[c])
	HR (95% CI)	HR (95% CI)	HR (95% CI)	HR (95% CI)	HR (95% CI)	HR (95% CI)
Overall incident MI						
1-year mean						
N (cases)	22,884 (641)	22,884 (641)	22,884 (641)	22,884 (641)	22,884 (641)	22,884 (641)
$PM_{2.5}$	1.17 (1.05-1.31)	1.05 (0.92-1.19)	1.05 (0.92-1.19)	1.04 (0.91-1.19)	1.02 (0.89-1.16)	1.04 (0.91-1.19)
PM_{10}	1.19 (1.07-1.31)	1.04 (0.92-1.17)	1.04 (0.92-1.18)	1.04 (0.92-1.17)	1.02 (0.90-1.15)	1.04 (0.92-1.17)
NO_2	1.03 (0.95-1.13)	1.04 (0.94-1.16)	1.04 (0.93-1.17)	1.04 (0.93-1.17)	1.04 (0.93-1.17)	1.04 (0.93-1.17)
NO_x	1.03 (0.98-1.07)	1.02 (0.97-1.07)	1.02 (0.97-1.08)	1.02 (0.97-1.08)	1.02 (0.97-1.08)	1.02 (0.97-1.08)
3-year mean						
N (cases)	22,887 (641)	22,887 (641)	22,887 (641)	22,887 (641)	22,887 (641)	22,887 (641)
$PM_{2.5}$	1.20 (1.07-1.35)	1.06 (0.92-1.23)	1.07 (0.92-1.23)	1.06 (0.92-1.22)	1.03 (0.89-1.19)	1.06 (0.92-1.23)
PM_{10}	1.22 (1.09-1.35)	1.06 (0.93-1.21)	1.06 (0.93-1.21)	1.06 (0.93-1.20)	1.04 (0.91-1.18)	1.06 (0.93-1.20)
NO_2	1.04 (0.95-1.13)	1.05 (0.94-1.16)	1.05 (0.94-1.18)	1.05 (0.94-1.18)	1.05 (0.94-1.18)	1.05 (0.94-1.17)
NO_x	1.03 (0.98-1.07)	1.02 (0.98-1.07)	1.03 (0.98-1.08)	1.02 (0.97-1.08)	1.03 (0.98-1.08)	1.02 (0.97-1.08)
23-year mean						
N (cases)	22,902 (642)	22,902 (642)	22,902 (642)	22,902 (642)	22,902 (642)	22,902 (642)
NO_2	1.04 (0.96-1.13)	1.10 (0.99-1.22)	1.14 (1.02-1.28)	1.14 (1.01-1.27)	1.14 (1.02-1.28)	1.13 (1.01-1.27)
NO_x	1.03 (1.00-1.07)	1.04 (1.00-1.08)	1.05 (1.01-1.09)	1.05 (1.00-1.09)	1.05 (1.01-1.10)	1.05 (1.00-1.09)
Fatal incident MI						
1-year mean						
N (cases)	22,955 (123)	22,955 (123)	22,955 (123)	22,955 (123)	22,955 (123)	22,955 (123)
$PM_{2.5}$	1.75 (1.40-2.18)	1.47 (1.12-1.93)	1.50 (1.14-1.96)	1.44 (1.11-1.86)	1.44 (1.10-1.89)	1.48 (1.13-1.95)
PM_{10}	1.75 (1.44-2.13)	1.43(1.12-1.81)	1.46 (1.15-1.86)	1.43 (1.13-1.80)	1.42 (1.11-1.81)	1.45 (1.14-1.84)
NO_2	1.04 (0.86-1.26)	1.05 (0.83-1.31)	1.08 (0.85-1.39)	1.09 (0.85-1.39)	1.07 (0.84-1.37)	1.08 (0.84-1.38)
NO_x	1.03 (0.93-1.14)	1.02 (0.91-1.13)	1.03 (0.92-1.15)	1.03 (0.92-1.15)	1.03 (0.92-1.15)	1.03 (0.92-1.15)
3-year mean						
N (cases)	22,887 (121)	22,887 (121)	22,887 (121)	22,887 (121)	22,887 (121)	22,887 (121)
$PM_{2.5}$	1.69 (1.33-2.13)	1.35 (1.01-1.81)	1.39 (1.03-1.87)	1.33 (1.00-1.75)	1.33 (0.99-1.79)	1.38 (1.03-1.85)

PM$_{10}$	1.65 (1.34-2.03)	1.28 (0.98-1.65)	1.30 (1.00-1.70)	1.28 (0.99-1.64)	1.26* (0.97-1.64)	1.29 (0.99-1.68)
NO$_2$	1.02 (0.84-1.23)	1.01 (0.80-1.28)	1.05 (0.82-1.35)	1.06 (0.83-1.36)	1.04 (0.81-1.34)	1.05 (0.81-1.34)
NO$_x$	1.02 (0.92-1.13)	1.01 (0.90-1.12)	1.02 (0.91-1.14)	1.02 (0.91-1.14)	1.02 (0.91-1.14)	1.02 (0.91-1.14)
23-year mean						
N (cases)	22,902 (121)	22,902 (121)	22,902 (121)	22,902 (121)	22,902 (121)	22,902 (121)
NO$_2$	1.01 (0.84-1.22)	1.08 (0.86-1.36)	1.12 (0.87-1.44)	1.13 (0.88-1.44)	1.12 (0.87-1.44)	1.12 (0.87-1.43)
NO$_x$	1.02 (0.94-1.11)	1.03 (0.94-1.12)	1.04 (0.94-1.14)	1.04 (0.94-1.14)	1.04 (0.94-1.14)	1.04 (0.94-1.14)

Note: Body mass index (BMI); Myocardial infarction (MI); Hazard Ratio (HR); 95% Confidence interval (95% CI); Number (N); Particulate matter with an aerodynamic diameter of < 2.5 µg/m^3 (PM$_{2.5}$), <10 µg/m^3 (PM$_{10}$); Nitrogen dioxide (NO$_2$); Nitrogen oxides (NO$_x$); Joint expression of day (L$_d$; 07:00-19:00 hours (h)), evening (L$_e$; 19:00-22:00 h), and night (L$_n$; 22:00-07:00 h) road traffic noise levels, with 5 and 10 dB penalties added to the evening and night estimates, respectively (L$_{den}$). Estimates are based on interquartile range (IQR) increments for PM$_{2.5}$ (5.3 µg/m^3), PM$_{10}$ (5.5 µg/m^3), NO$_2$, (8.1 µg/m^3), NO$_x$ (11.5 µg/m^3), and L$_{den}$ (10 dB). Diabetes and hypertension are self-reported (diagnosis/medication for).

[a]Model 1: adjusted for age (underlying time) and year of cohort entry (1993/1999).

[b]Model 2: Model 1, further adjusted for smoking status, pack-years, consumption of fruit, avoidance of fatty meat, alcohol consumption, use of oral contraceptives, use of hormone therapy, physical activity, marital status, employment status, and level of urbanization.

Supplemental Table S5. Confounding of the association between a 1-year running mean exposure to $PM_{2.5}$ or PM_{10} and both overall and fatal incident MI.

	Overall incident MI			Fatal incident MI		
	Number (cases)	$PM_{2.5}$ HR (95% CI)	PM_{10} HR (95% CI)	Number (cases)	$PM_{2.5}$ HR (95% CI)	PM_{10} HR (95% CI)
Model 1[a]	22,884 (641)	1.17 (1.05-1.31)	1.19 (1.07-1.31)	22,955 (123)	1.75 (1.40-2.18)	1.75 (1.44-2.13)
Model 1 +						
Smoking status	22,884 (641)	1.17 (1.04 - 1.30)	1.18 (1.07 - 1.31)	22,955 (123)	1.75 (1.40 - 2.18)	1.76 (1.45 - 2.14)
Pack-years	22,884 (641)	1.14 (1.02 - 1.27)	1.16 (1.05 - 1.29)	22,955 (123)	1.70 (1.36 - 2.12)	1.72 (1.41 - 2.10)
Consumption of fruit	22,884 (641)	1.18 (1.06 - 1.31)	1.19 (1.08 - 1.32)	22,955 (123)	1.76 (1.41 - 2.19)	1.76 (1.45 - 2.14)
Avoidance of fatty meat	22,884 (641)	1.17 (1.05 - 1.31)	1.18 (1.07 - 1.31)	22,955 (123)	1.76 (1.41 - 2.19)	1.76 (1.44 - 2.14)
Alcohol consumption	22,884 (641)	1.16 (1.04 - 1.30)	1.17 (1.06 - 1.30)	22,955 (123)	1.74 (1.40 - 2.18)	1.74 (1.43 - 2.12)
Oral contraceptive use	22,884 (641)	1.15 (1.03 - 1.29)	1.17 (1.05 - 1.29)	22,955 (123)	1.65 (1.32 - 2.07)	1.66 (1.36 - 2.04)
Hormone therapy use	22,884 (641)	1.17 (1.04 - 1.30)	1.18 (1.06 - 1.31)	22,955 (123)	1.75 (1.40 - 2.18)	1.75 (1.44 - 2.12)
Physical activity	22,884 (641)	1.15 (1.03 - 1.28)	1.16 (1.05 - 1.29)	22,955 (123)	1.57 (1.26 - 1.97)	1.60 (1.31 - 1.96)
Marital status	22,884 (641)	1.17 (1.05 - 1.31)	1.19 (1.07 - 1.32)	22,955 (123)	1.61 (1.28 - 2.03)	1.63 (1.33 - 2.00)
Employment status	22,884 (641)	1.05 (0.93 - 1.18)	1.07 (0.95 - 1.20)	22,955 (123)	1.53 (1.19 - 1.95)	1.56 (1.25 - 1.94)
Level of urbanization	22,884 (641)	1.21 (1.08 - 1.36)	1.19 (1.07 - 1.32)	22,955 (123)	1.97 (1.56 - 2.49)	1.84 (1.50 - 2.25)
Road traffic noise (L_{den})	22,878 (641)	1.20 (1.07 - 1.34)	1.20 (1.08 - 1.33)	22,878 (121)	1.91 (1.51 - 2.41)	1.87 (1.52 - 2.30)
Model 2[b]	22,884 (641)	1.05 (0.92 - 1.19)	1.04 (0.92 - 1.17)	22,955 (123)	1.47 (1.12 - 1.93)	1.43 (1.12 - 1.81)
Model 3[c]	22,878 (641)	1.04 (0.91 - 1.19)	1.04 (0.92 - 1.17)	22,878 (121)	1.48 (1.13 - 1.95)	1.45 (1.14 - 1.84)

Note: Myocardial infarction (MI); Hazard Ratio (HR); 95% Confidence interval (95% CI); Particulate matter with an aerodynamic diameter of < 2.5 µg/m³ ($PM_{2.5}$), <10 µg/m³ (PM_{10}); Joint expression of day (L_d; 07:00-19:00 hours (h)), evening (L_e; 19:00-22:00 h), and night (L_n; 22:00-07:00 h) road traffic noise levels, with 5 and 10 dB penalties added to the evening and night estimates, respectively (L_{den}). Estimates are based on interquartile range (IQR) increments for $PM_{2.5}$ (5.3 µg/m³), PM_{10} (5.5 µg/m³) and L_{den} (10 dB).

[a]Model 1: adjusted for age (underlying time) and year of cohort entry (1993/1999).

[b]Model 2: Model 1, further adjusted for smoking status, pack-years, consumption of fruit, avoidance of fatty meat, alcohol consumption, use of oral contraceptives, use of hormone therapy, physical activity, marital status, employment status, and level of urbanization.

[c]Model 3: Model 2, futher adjusted for L_{den}

Supplemental Table S6. Associations between long-term exposure to air pollution and fatal incident MI in the Danish Nurse Cohort, restricted to cases identified through the Danish Registry of Causes of Death.

	Danish Register of Causes of Death		
	Model 1 Crude[a]	Model 2 Fully adjusted[b]	Model 3 Fully adjusted[b] + L_{den}
	HR (95% CI)	HR (95% CI)	HR (95% CI)
1-year mean			
N (cases)	22,884 (104)	22,884 (104)	22878 (104)
$PM_{2.5}$	1.82 (1.44 - 2.30)	1.61 (1.21 - 2.15)	1.67 (1.25 - 2.23)
PM_{10}	1.80 (1.46 - 2.22)	1.53 (1.18 - 1.97)	1.58 (1.22 - 2.06)
NO_2	1.05 (0.86 - 1.29)	1.13 (0.89 - 1.42)	1.26 (0.96 - 1.64)
NO_x	1.04 (0.94 - 1.15)	1.05 (0.94 - 1.17)	1.09 (0.97 - 1.22)
3-year mean			
N (cases)	22,887 (104)	22,887 (104)	22,882 (104)
$PM_{2.5}$	1.73 (1.34 - 2.22)	1.47 (1.07 - 2.01)	1.52 (1.11 - 2.09)
PM_{10}	1.68 (1.35 - 2.10)	1.34 (1.01 - 1.77)	1.39 (1.04 - 1.85)
NO_2	1.02 (0.83 - 1.25)	1.09 (0.86 - 1.38)	1.20 (0.91 - 1.58)
NO_x	1.03 (0.93 - 1.14)	1.04 (0.93 - 1.16)	1.07 (0.96 - 1.20)
23-year mean			
N (cases)	22,902 (104)	22,902 (104)	22,902 (104)
NO_2	1.02 (0.84 - 1.25)	1.18 (0.93 - 1.50)	1.19 (0.91 - 1.57)
NO_x	1.04 (0.96 - 1.13)	1.06 (0.97 - 1.16)	1.06 (0.96 - 1.17)

Note: Myocardial infarction (MI); Hazard Ratio (HR); 95% Confidence interval (95% CI); Number (N); Particulate matter with an aerodynamic diameter of < 2.5 µg/m³ ($PM_{2.5}$), <10 µg/m³ (PM_{10}); Nitrogen dioxide (NO_2); Nitrogen oxides (NO_x); Joint expression of day (L_d; 07:00-19:00 hours (h)), evening (L_e; 19:00-22:00 h), and night (L_n; 22:00-07:00 h) road traffic noise levels, with 5 and 10 dB penalties added to the evening and night estimates, respectively (L_{den}). Estimates are based on interquartile range (IQR) increments for $PM_{2.5}$ (5.3 µg/m³), PM_{10} (5.5 µg/m³), NO_2, (8.1 µg/m³), NO_x (11.5 µg/m³), and L_{den} (10 dB). [a]Crude model, adjusted for age (underlying time) and year of cohort entry (1993/1999).

[a]Model 1: adjusted for age (underlying time) and year of cohort entry (1993/1999).

[b]Model 2: Model 1, further adjusted for smoking status, pack-years, consumption of fruit, avoidance of fatty meat, alcohol consumption, use of oral contraceptives, use of hormone therapy, physical activity, marital status, employment status, and level of urbanization.

[c]Model 3: Model 2, futher adjusted for L_{den}

Supplemental Table S7. Associations between a 1- and 3-year running mean exposure of $PM_{2.5}$ (5.3 µg/m^3), and both overall and fatal incident MI in the Danish Nurse Cohort, in Cox models employing multiple modes of adjustment for calendar effects.

	Overall incident MI			Fatal incident MI		
	Model 1[a]	Model 2[b]	Model 3[b]	Model 1[a]	Model 2[b]	Model 3[b]
	HR (95% CI)	HR (95% CI)	HR (95% CI)	HR (95% CI)	HR (95% CI)	HR (95% CI)
1-year mean						
N (cases)	22,884 (641)	22,884 (641)	22,878 (641)	22,955 (123)	22,955 (123)	22,878 (121)
Original	1.17 (1.05-1.31)	1.05 (0.92-1.19)	1.04 (0.91-1.19)	1.75 (1.40-2.18)	1.47 (1.12-1.93)	1.48 (1.13-1.95)
Original +						
Calendar year (continuous)	1.05 (0.89-1.23)	1.09 (0.92-1.30)	1.10 (0.92-1.31)	1.14 (0.81-1.60)	1.32 (0.91-1.92)	1.39 (0.95-2.04)
Calendar year (strata, 1 year)	1.06 (0.86-1.31)	1.16 (0.92-1.48)	1.16 (0.90-1.50)	0.83 (0.52-1.32)	0.98 (0.56-1.69)	0.99 (0.56-1.75)
Birth cohort (strata, 5 years)	1.17 (1.01-1.35)	1.15 (0.98-1.35)	1.15 (0.98-1.35)	1.46 (1.08-1.98)	1.52 (1.08-2.15)	1.60 (1.12-2.27)
3-year mean						
N (cases)	22,887 (641)	22,887 (641)	22,882 (641)	22,887 (121)	22,887 (121)	22,882 (121)
Original	1.20 (1.07-1.35)	1.06 (0.92-1.23)	1.06 (0.92-1.23)	1.69 (1.33-2.13)	1.35 (1.01-1.81)	1.38 (1.03-1.85)
Original +						
Calendar year (continuous)	1.07 (0.90-1.28)	1.15 (0.94-1.41)	1.16 (0.94-1.43)	0.92 (0.63-1.36)	1.07 (0.69-1.66)	1.13 (0.72-1.79)
Calendar year (strata, 1 year)	1.07 (0.87-1.30)	1.18 (0.93-1.48)	1.18 (0.92-1.51)	0.85 (0.54-1.34)	1.00 (0.59-1.72)	1.02 (0.58-1.80)
Birth cohort (strata, 5 years)	1.18 (0.99-1.41)	1.18 (0.99-1.41)	1.26 (1.04-1.53)	1.25 (0.87-1.78)	1.25 (0.87-1.78)	1.40 (0.96-2.04)

Note: Myocardial infarction (MI); Hazard Ratio (HR); 95% Confidence interval (95% CI); Number (N); Particulate matter with an aerodynamic diameter of < 2.5 µg/m^3 ($PM_{2.5}$); Joint expression of day (L_d; 07:00-19:00 hours (h)), evening (L_e; 19:00-22:00 h), and night (L_n; 22:00-07:00 h) road traffic noise levels, with 5 and 10 dB penalties added to the evening and night estimates, respectively (L_{den}). Estimates are based on interquartile range (IQR) increments for $PM_{2.5}$ (5.3 µg/m^3) and L_{den} (10 dB).

[a]Model 1: adjusted for age (underlying time) and year of cohort entry (1993/1999).

[b]Model 2: Model 1, further adjusted for smoking status, pack-years, consumption of fruit, avoidance of fatty meat, alcohol consumption, use of oral contraceptives, use of hormone therapy, physical activity, marital status, employment status, and level of urbanization.

[c]Model 3: Model 2, futher adjusted for L_{den}

Supplemental Table S8. All possible exposure windows for each pollutant, correlated with calendar year (1993-2015) and birth cohort (5-year intervals), among 22,882 nurses from the Danish Nurse Cohort.

Pollutant	Calendar Year	Birth Cohort
1-year		
$PM_{2.5}$	-0.7618	-0.1928
PM_{10}	-0.7824	-0.2019
NO_2	-0.1894	-0.1084
NO_x	-0.1566	-0.0922
L_{den}	0.0206	-0.0776
3-year		
$PM_{2.5}$	-0.7895	-0.2023
PM_{10}	-0.8190	-0.2107
NO_2	-0.1833	-0.1040
NO_x	-0.1558	-0.0919
L_{den}	0.0214	-0.0757
23-year		
NO_2	-0.0380	-0.0614
NO_x	-0.0923	-0.0649
L_{den}	0.0153	-0.0392

Note: Particulate matter with an aerodynamic diameter of < 2.5 µg/m^3 ($PM_{2.5}$), <10 µg/m^3 (PM_{10}); Nitrogen dioxide (NO_2); Nitrogen oxides (NO_x); Joint expression of day (L_d; 07:00-19:00 hours (h)), evening (L_e; 19:00-22:00 h), and night (L_n; 22:00-07:00 h) road traffic noise levels, with 5 and 10 dB penalties added to the evening and night estimates, respectively (L_{den}).

Supplemental Table S9. Effect modification of the association between residential PM$_{2.5}$ concentration (modeled as a continuous variable, 1-year mean, per IQR increase) and both overall and fatal incident MI in the Danish Nurse Cohort.

		Overall incident MI			Fatal incident MI	
	N	Model 3[a] HR (95% CI)	p-value[b]	N	Model 3[a] HR (95% CI)	p-value[b]
Age at baseline						
< 65	472	1.00 (0.84-1.18)		61	1.39 (0.88-2.19)	
≥ 65	169	1.09 (0.85-1.41)	0.70	60	1.44 (0.98-2.13)	1.00
Road Traffic Noise (dB) (L$_{den}$)[c]						
Low (< 50.4)	175	1.01 (0.78-1.32)		34	2.06 (1.19-3.55)	
Medium (50.4-56.2)	215	1.02 (0.80-1.30)		40	1.44 (0.83-2.49)	
High (≥56.2)	251	1.08 (0.89-1.32)	0.94	47	1.36 (0.91-2.05)	0.92
Obesity[d]						
Not obese	592	1.06 (0.93-1.22)		112	1.47 (1.11-1.94)	
Obese	49	0.86 (0.52-1.42)	0.57	9	2.34 (0.63-8.73)	0.71
Physical activity						
Low	64	0.94 (0.64-1.38)		26	1.43 (0.85-2.40)	
Medium	439	1.07 (0.92-1.26)		78	1.49 (1.04-2.13)	
High	138	0.98 (0.72-1.33)	0.39	17	1.51 (0.65-3.50)	0.95
Smoking status						
Never	170	0.94 (0.73-1.22)		28	1.39 (0.82-2.36)	
Previous	164	1.14 (0.88-1.47)		27	2.08 (1.17-3.71)	
Current	307	1.04 (0.86-1.26)	0.60	66	1.30 (0.88-1.92)	0.32
Hypertension[e]						
No	462	0.97 (0.83-1.13)		77	1.33 (0.94-1.88)	
Yes	179	1.16 (0.91-1.49)	0.09	44	1.73 (1.09-2.75)	0.80
Diabetes[e]						
No	620	1.01 (0.89-1.16)		110	1.40 (1.04-1.87)	
Yes	21	1.98 (1.05-3.73)	0.05	11	2.75 (0.89-8.50)	0.40
Level of urbanization						
Rural	107	0.94 (0.76-1.15)		17	1.48 (0.96-2.28)	
Provincial	245	1.08 (0.87-1.35)		47	1.35 (0.87-2.08)	
Urban	289	1.20 (0.92-1.57)	0.63	57	1.74 (0.97-3.13)	0.85
Menopausal status						

Premenopausal	140	1.00 (0.72-1.39)		15	2.06 (0.86-4.92)	
Postmenopausal	501	1.01 (0.87-1.17)	*0.29*	106	1.43 (1.07-1.90)	*0.37*

Note: Number cases (N); Myocardial infarction (MI); Hazard Ratio (HR); 95% Confidence interval (95% CI); Particulate matter with an aerodynamic diameter of < 2.5 µg/m^3 (PM$_{2.5}$); Joint expression of day (L_d; 07:00-19:00 hours (h)), evening (L_e; 19:00-22:00 h), and night (L_n; 22:00-07:00 h) road traffic noise levels, with 5 and 10 dB penalties added to the evening and night estimates, respectively (L_{den}). Estimates are based on interquartile range (IQR) increments of 5.3 µg/m^3.

[a]Model 3:adjusted for age (underlying time), year of cohort entry (1993/1999), smoking status, pack-years, consumption of fruit, avoidance of fatty meat, alcohol consumption, use of oral contraceptives, use of hormone therapy, physical activity, marital status, employment status, level of urbanization, and L_{den}.

[b]From likelihood ratio test for interaction

[c]Based on Model 2: (Model 3, unadjusted for L_{den})

[d]Body Mass Index ≥ 30

[e]Self-reported (diagnosed/medication for)
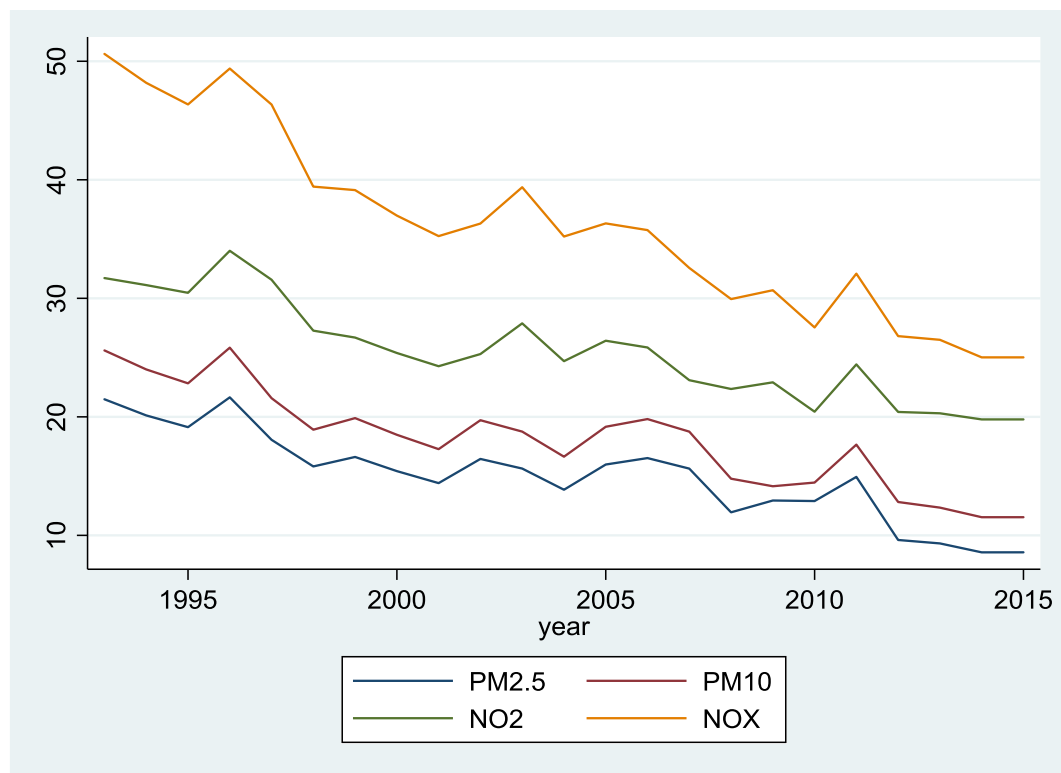
Supplemental Figure S1. Mean annual residential exposure levels for $PM_{2.5}$, PM_{10}, NO_2, and NO_x throughout the study period (1993-2015).