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Supplemental Material

Source-Specific Air Pollution Including Ultrafine Particles and Risk of Myocardial Infarction: A Nationwide Cohort Study from Denmark

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Figure S7. Contributions from different SNAP source categories to Danish air pollution in 2010. Note that contributions from ships have been singled out from SNAP 08: Other mobile sources and machinery.

References

Table S1. Main categories of the Selected Nomenclature for Air Pollution (SNAP) classification[1] used in the Danish emission inventory

SNAP categories	
SNAP 01	Combustion in energy and transformation industries
SNAP 02	Non-industrial combustion plants
SNAP 03	Combustion in manufacturing industry
SNAP 04	Production processes
SNAP 05	Extraction/distribution of fossil fuels and geothermal energy
SNAP 06	Solvents and other product use
SNAP 07	Road transport
SNAP 08	Other mobile sources and machinery
SNAP 09	Waste treatment and disposal
SNAP 10	Agriculture
SNAP 11	Other sources and sinks

Table S2. Cohort (N=1,964,702) characteristics at baseline (last of: 1 January 2005 and age 50 years), above and below median of $PM_{2.5}$ and UFP concentration over previous 5 years, in Denmark, 2005-2017.

	$PM_{2.5}$		**Ultrafine particles**	
	6.06-11.16 ug/m^3	11.16 -30.49 ug/m^3	3873-11 106 particles/cm^3	11 106-35 782 particles/cm^3
Sample size (number)	982 065	982 637	982 176	982 526
Individual level variables				
Women *[n (%)]*	500 543 (51)	536 545 (54)	502 663 (51)	534 425 (55)
Age (years) [median (10-90%)]	55 (50-74)	60 (50-77)	50 (50-72)	62 (50-78)
Country of origin				
Denmark	972 591 (99)	954 444 (97)	972 093 (99)	954 942 (97)
Other	9 474 (1)	28 193 (3)	10 083 (1)	27 584 (3)
Civil status *[n (%)]*				
Married/Cohabiting	750 373 (76)	687 827 (70)	761 163 (78)	677 037 (69)
Other	231 692 (23)	294 810 (31)	221 013 (23)	305 489 (31)
Education[a] *[n (%)]*				
Mandatory	334 650 (34)	376 929 (38)	375 300 (38)	336 279 (34)
Short	462 416 (47)	425 597 (43)	446 979 (45)	441 034 (45)
Medium or long	184 999 (19)	180 111 (18)	159 897 (17)	205 213 (21)
Occupational status[b] *[n (%)]*				
White collar, high level	116 301 (12)	84 583 (9)	96 701 (10)	104 183 (11)
White collar, low level	176 091 (18)	120 537 (12)	159 592 (16)	137 036 (14)
Blue collar	350 990 (36)	239 223 (24)	337 155 (34)	253 058 (26)
Unemployed	41 608 (4)	34 349 (4)	37 510 (4)	38 447 (4)
Retired	297 075 (30)	503 945 (51)	351 218 (36)	449 802 (46)
Personal income, quintiles[c] *[n (%)]*				
1st (low)	211 273 (22)	278 390 (28)	246 478 (25)	243 185 (25)
2nd	195 324 (20)	219 380 (22)	208 357 (21)	206 347 (21)
3rd	179 584 (18)	147 436 (15)	176 025 (18)	150 995 (15)
4th	190 453 (19)	146 755 (15)	177 045 (18)	160 163 (16)
5th (high)	205 431 (21)	190 676 (19)	174 271 (18)	221 836 (23)
Household income, quintiles[d] *[n (%)]*				
1st (low)	176 673 (18)	230 243 (24)	201 285 (21)	205 631 (21)
2nd	171 789 (18)	183 784 (19)	180 510 (18)	175 063 (18)
3rd	181 036 (18)	147 863 (15)	177 663 (18)	151 236 (15)
4th	219 338 (22)	172 432 (18)	209 968 (22)	181 802 (18)
5th (high)	233 229 (24)	248 315 (25)	212 750 (22)	268 794 (27)
Area-level variables [median (10-90%)]				
% Non-western background	3 (1-10)	4 (1-14)	2 (1-7)	5 (1-15)
% Only basic education	11 (6-15)	11 (6-15)	11 (7-15)	10 (5-14)
% Manual labour	14 (9-17)	13 (8-17)	14 (11-17)	12 (7-16)
% Unemployed	2 (1-3)	2 (1-3)	2 (1-3)	2 (1-3)
% Low income	4 (2-7)	4 (2-8)	4 (2-7)	4 (2-9)
% Social housing[e]	11 (0-35)	17 (2-48)	9 (0-28)	20 (3-49)
% Sole-providers	5 (3-8)	6 (4-8)	5 (3-7)	6 (4-9)

% With criminal record	0.4 (0.1-0.8)	0.5 (0.2-1.0)	0.4 (0.1-0.7)	0.5 (0.2-1.0)

[a]: Short: vocational training, secondary education or <2 years of post-secondary education. Medium or long >2 years of post secondary education

[b]: White collar, high level: Managers/directors with ≥5 employees and people with employment that requires high level skills. White collar, low level: Managers with 0-4 employees and people with employment that requires intermediate level skills. Blue collar: employment that requires low level skills.

[c]: we applied age and calendar year specific quintiles to account for inflation and income disparities by sex. In 2017 the 20th 40th 60th and 80th percentile in dkr were 142 926, 198 363, 249 053, and 312 717 for women and 147 235, 219 142, 281 097, and 370 134 for men.

[d]: we applied age and calendar year specific quintiles to account for inflation and income disparities by sex for singles. In 2017, the 20th 40th 60th and 80th percentile per adult in household, in dkr, were 174 497, 229 476, 286 079, and 365 263 for women and 171 817, 232 821, 290 162, and 369 949 for men.

[e]: Publicly funded non-profit housing estates, where a third of the apartments can be used by municipalities for persons in need.

Table S3. Spearman rank correlations between 5-year time weighted average air pollution concentration at residences of all cohort members, Denmark, 2005-2017, N=1,964,702.

	$PM_{2.5}$					**UFP**			**EC**			**NO_2**		
	Total	Traffic	Non-traffic	Tailpipe	Non-tailpipe	Total	Traffic	Non-traffic	Total	Traffic	Non-traffic	Total	Traffic	Non-traffic
$PM_{2.5}$														
Total	1	0.59	0.96	0.66	0.45	0.77	0.63	0.77	0.71	0.62	0.69	0.76	0.60	0.80
Traffic	0.59	1	0.41	0.99	0.97	0.80	0.97	0.63	0.91	0.99	0.68	0.91	0.99	0.56
Non-traffic	0.96	0.41	1	0.49	0.26	0.67	0.46	0.72	0.56	0.44	0.63	0.61	0.42	0.77
Tailpipe	0.66	0.99	0.49	1	0.94	0.83	0.98	0.68	0.92	0.99	0.71	0.93	0.99	0.61
Non-tailpipe	0.45	0.97	0.26	0.94	1	0.71	0.93	0.53	0.85	0.96	0.60	0.84	0.96	0.46
UFP														
Total	0.77	0.80	0.67	0.83	0.71	1	0.85	0.96	0.91	0.83	0.86	0.92	0.81	0.82
Traffic	0.63	0.97	0.46	0.98	0.93	0.85	1	0.69	0.94	0.99	0.75	0.93	0.99	0.61
Non-traffic	0.77	0.63	0.72	0.68	0.53	0.96	0.69	1	0.80	0.67	0.85	0.80	0.64	0.84
EC														
Total	0.71	0.91	0.56	0.92	0.85	0.91	0.94	0.80	1	0.93	0.90	0.93	0.92	0.69
Traffic	0.62	0.99	0.44	0.99	0.96	0.83	0.99	0.67	0.93	1	0.72	0.92	0.99	0.59
Non-traffic	0.69	0.68	0.63	0.71	0.60	0.86	0.75	0.85	0.90	0.72	1	0.78	0.71	0.71
NO_2														
Total	0.76	0.91	0.61	0.93	0.84	0.92	0.93	0.80	0.93	0.92	0.78	1	0.92	0.82
Traffic	0.60	0.99	0.42	0.99	0.96	0.81	0.99	0.64	0.92	0.99	0.71	0.92	1	0.56
Non-traffic	0.80	0.56	0.77	0.61	0.46	0.82	0.61	0.84	0.69	0.59	0.71	0.82	0.56	1

Table S4. Spearman rank correlations between area level socioeconomic factors and individual socioeconomic factors and air pollutant concentrations. Air pollution is 5-year time weighted average air pollution concentration at residences of each cohort member. Denmark, 2005-2017, N=1,964,702.

	Area-level covariates (% of parish inhabitants)							
	Basic education	Criminal record	Low income	Manual labor	Non western background	Social housing	Sole provider	Unemployed
Personal covariates								
Education	-0.22	-0.04	-0.08	-0.17	0.06	0.01	0.05	-0.10
Occupational status	-0.05	-0.06	-0.07	0.01	-0.04	-0.07	-0.03	0.04
Income	-0.17	-0.06	-0.12	-0.11	0.05	0.00	0.04	-0.10
Household income	-0.18	-0.11	-0.19	-0.07	0.00	-0.04	0.02	-0.14
Pollutants								
$PM_{2.5}$ Total	0.10	0.16	0.00	-0.16	0.19	0.17	0.03	0.27
$PM_{2.5}$ Traffic	-0.29	0.29	0.05	-0.46	0.50	0.36	0.23	0.15
$PM_{2.5}$ non-traffic	0.18	0.10	-0.04	-0.06	0.09	0.12	0.00	0.26
UFP total	-0.19	0.26	0.04	-0.42	0.43	0.35	0.22	0.23
UFP traffic	-0.30	0.29	0.03	-0.48	0.53	0.39	0.25	0.16
UFP non-traffic	-0.12	0.20	-0.01	-0.34	0.33	0.30	0.19	0.23
EC total	-0.27	0.26	0.01	-0.44	0.47	0.35	0.23	0.17
EC traffic	-0.29	0.29	0.04	-0.47	0.52	0.37	0.24	0.16
EC non-traffic	-0.23	0.16	-0.08	-0.34	0.35	0.29	0.20	0.14
NO^2 total	-0.22	0.28	0.06	-0.44	0.49	0.35	0.23	0.18
NO^2 traffic	-0.29	0.28	0.04	-0.46	0.51	0.36	0.23	0.15
NO^2 non-traffic	-0.07	0.17	0.00	-0.27	0.31	0.23	0.17	0.16

Table S5. Spearman rank correlations between 1, 5 and 10-year average air pollution concentration at residential addresses of all cohort members. Denmark, 2005-2017, N=1,964,702.

	Time weighted average periods		
	1 vs 5 year	5 vs 10 year	1 vs 10 year
$PM_{25total}$	0.97	0.99	0.95
$PM_{2.5traffic}$	0.97	0.97	0.93
$PM_{2.5non-traffic}$	0.97	1.00	0.95
$PM_{2.5tailpipe}$	0.97	0.97	0.93
$PM_{2.5Non-Tailpipe}$	0.97	0.98	0.94
EC_{total}	0.94	0.98	0.89
$EC_{traffic}$	0.97	0.97	0.93
$EC_{non-traffic}$	0.92	0.97	0.85
UFP_{total}	0.96	0.97	0.91
$UFP_{traffic}$	0.98	0.98	0.94
$UFP_{non-traffic}$	0.96	0.96	0.90
NO_{2total}	0.98	0.98	0.95
$NO_{2traffic}$	0.98	0.98	0.94
$NO_{2non-traffic}$	0.98	0.99	0.96

Table S6. Linear associations between MI and air pollutants, total and by source, per fixed unit. Fully adjusted model 3. Denmark, 2005-2017, N=1,964,702.

Pollutant/source	Unit	HR[a] (95% CI)	
$PM_{2.5}$			
Total	5 μg/m^3	1.149	(1.097-1.203)
Non-traffic	5 μg/m^3	1.164	(1.102-1.228)
Traffic	5 μg/m^3	1.158	(1.047-1.282)
Tailpipe	5 μg/m^3	1.294	(1.091-1.534)
Non-tailpipe	5 μg/m^3	1.359	(1.073-1.722)
UFP			
Total	10.000 #/cm^3	1.096	(1.059-1.133)
Non-traffic	10.000 #/cm^3	1.129	(1.083-1.177)
Traffic	10.000 #/cm^3	1.068	(0.992-1.151)
EC			
Total	1 μg/m^3	1.034	(1.000-1.068)
Non-traffic	1 μg/m^3	1.011	(0.963-1.061)
Traffic	1 μg/m^3	1.08	(1.020-1.145)
NO_2			
Total	10 μg/m^3	1.037	(1.019-1.056)
Non-traffic	10 μg/m^3	1.191	(1.135-1.249)
Traffic	10 μg/m^3	1.017	(0.995-1.039)

[a]: adjusted for age, sex and calendar period, marital status, education, occupational status, ethnicity, personal and household income and area level information on percentage of population: living in social housing, being sole providers, of non-western origin, having low income, being unemployed, having blue collar work, having only basic education and having criminal record.

Table S7. Associations between MI and categories of air pollutants concentration: overall and by traffic or non-traffic sources. Denmark, 2005-2017, N=1,964,702.

Percentile	**Total**			**Traffic**			**Non-traffic**		
$PM_{2.5}$ ($\mu g/m^3$)	Exposure range	HR[a]	(95%CI)	Exposure range	HR[a]	(95%CI)	Exposure range	HR[a]	(95%CI)
<10	<8.69	Ref.	-	<0.06	Ref.	-	<8.51	Ref.	-
10-25	8.69-<9.4	1.035	(1.007-1.063)	0.06-<0.1	0.983	(0.957-1.011)	8.51-<9.16	1.025	(0.997-1.054)
25-50	9.4-<10.28	1.049	(1.020-1.078)	0.1-<0.23	0.977	(0.950-1.004)	9.16-<9.98	1.059	(1.030-1.088)
50-75	10.28-<11.26	1.098	(1.063-1.134)	0.23-<0.47	0.982	(0.953-1.012)	9.98-<10.79	1.109	(1.072-1.146)
75-90	11.26-<11.91	1.092	(1.050-1.135)	0.47-<0.86	1.026	(0.990-1.062)	10.79-<11.34	1.104	(1.061-1.149)
90-95	11.91-<12.26	1.104	(1.049-1.162)	0.86-<1.27	1.011	(0.963-1.062)	11.34-<11.55	1.115	(1.058-1.175)
95-100	12.26+	1.118	(1.060-1.180)	1.27+	1.033	(0.984-1.086)	11.55+	1.078	(1.026-1.133)
UFP ($particles/m^3$)									
<10	<7533	Ref.	-	<324	Ref.	-	<7046	Ref.	-
10-25	7533-<8877	1.011	(0.983-1.040)	324-<567	0.987	(0.961-1.014)	7046-<8147	0.978	(0.951-1.006)
25-50	8877-<10696	1.005	(0.976-1.033)	567-<1159	0.985	(0.958-1.012)	8147-<9302	1.010	(0.981-1.040)
50-75	10696-<13125	1.039	(1.006-1.073)	1159-<2264	0.972	(0.942-1.002)	9302-<10916	1.025	(0.992-1.059)
75-90	13125-<15290	1.069	(1.028-1.111)	2264-<3490	1.011	(0.974-1.050)	10916-<11878	1.011	(0.972-1.052)
90-95	15290-<16652	1.058	(1.005-1.114)	3490-<4363	1.009	(0.958-1.063)	11878-<12832	1.064	(1.015-1.115)
95-100	16652+	1.098	(1.044-1.156)	4363+	1.028	(0.975-1.085)	12832+	1.089	(1.040-1.140)
EC ($\mu g/m^3$)									
<10	<0.44	Ref.	-	<0.03	Ref.	-	<0.39	Ref.	-
10-25	0.44-<0.52	0.997	(0.970-1.025)	0.03-<0.05	0.987	(0.960-1.014)	0.39-<0.46	0.985	(0.959-1.013)
25-50	0.52-<0.64	0.988	(0.962-1.016)	0.05-<0.11	0.979	(0.952-1.007)	0.46-<0.52	0.979	(0.952-1.007)
50-75	0.64-<0.8	0.988	(0.958-1.020)	0.11-<0.22	0.981	(0.951-1.012)	0.52-<0.58	0.989	(0.959-1.021)
75-90	0.8-<0.96	1.027	(0.989-1.065)	0.22-<0.36	1.02	(0.983-1.059)	0.58-<0.62	0.971	(0.937-1.007)
90-95	0.96-<1.09	1.035	(0.985-1.087)	0.36-<0.49	1.04	(0.989-1.094)	0.62-<0.65	0.97	(0.927-1.016)
95-100	1.09+	1.038	(0.988-1.092)	0.49+	1.028	(0.975-1.083)	0.65+	0.983	(0.942-1.027)
NO_2 ($\mu g/m^3$)									
<10	<9.88	Ref.	-	<1.25	Ref.	-	<8.01	Ref.	-
10-25	9.88-<11.82	1.004	(0.977-1.032)	1.25-<2.09	0.983	(0.957-1.010)	8.01-<9.22	1.007	(0.979-1.035)
25-50	11.82-<14.73	1.013	(0.986-1.041)	2.09-<3.96	0.972	(0.946-0.999)	9.22-<10.54	1.035	(1.007-1.063)
50-75	14.73-<18.97	1.034	(1.003-1.066)	3.96-<7.27	0.976	(0.948-1.006)	10.54-<11.9	1.075	(1.044-1.107)
75-90	18.97-<23.37	1.081	(1.042-1.121)	7.27-<11.25	1.011	(0.976-1.048)	11.9-<13.03	1.097	(1.058-1.136)
90-95	23.37-<26.81	1.069	(1.017-1.124)	11.25-<14.53	0.994	(0.946-1.045)	13.03-<13.61	1.08	(1.026-1.138)
95-100	26.81+	1.059	(1.006-1.115)	14.53+	1.009	(0.961-1.061)	13.61+	1.128	(1.077-1.181)

[a]: Adjusted for age, sex, calendar period, marital status, education, occupational status, ethnicity, personal and household income and percentage of parish population: living in social housing, being sole providers, of non-western origin, having low income, being unemployed, having blue collar work, having only basic education and having a criminal record.

Table S8. Associations between MI and categories of $PM_{2.5}$ from traffic, traffic-tailpipe and traffic-non-tailpipe. Denmark, 2005-2017, N=1,964,702.

Percentile		**Traffic**			**Tailpipe**			**Non-tailpipe**	
	Exposure range ($\mu g/m^3$)	HR[a] (95%CI)		Exposure range ($\mu g/m^3$)	HR[a] (95%CI)		Exposure range ($\mu g/m^3$)	HR[a] (95%CI)	
<10	<0.06	Ref.	-	<0.04	Ref.	-	<0.02	Ref.	-
10-25	0.06-<0.1	0.983	(0.957-1.011)	0.04-<0.07	0.984	(0.957-1.010)	0.02-<0.03	0.99	(0.962-1.019)
25-50	0.1-<0.23	0.977	(0.950-1.004)	0.07-<0.15	0.978	(0.951-1.006)	0.03-<0.07	0.995	(0.966-1.024)
50-75	0.23-<0.47	0.982	(0.953-1.012)	0.15-<0.31	0.988	(0.959-1.019)	0.07-<0.16	0.977	(0.946-1.008)
75-90	0.47-<0.86	1.026	(0.990-1.062)	0.31-<0.54	1.030	(0.993-1.069)	0.16-<0.31	1.026	(0.991-1.063)
90-95	0.86-<1.27	1.011	(0.963-1.062)	0.54-<0.78	1.009	(0.959-1.062)	0.31-<0.5	1.053	(1.005-1.104)
95-100	1.27+	1.033	(0.984-1.086)	0.78+	1.056	(1.002-1.112)	0.5+	1.043	(0.995-1.094)

[a]: Adjusted for age, sex, calendar period, marital status, education, occupational status, ethnicity, personal and household income and percentage of parish population: living in social housing, being sole providers, of non-western origin, having low income, being unemployed, having blue collar work, having only basic education and having a criminal record.

Table S9 Akaike Information Criterion (AIC) analyses, comparing model fit of fully adjusted models (model 3) including five year average air pollutants either linearly or categorically**.** Model adjusted for age, sex, calendar period, marital status, education, occupational status, ethnicity, personal and household income and percentage of parish population: living in social housing, being sole providers, of non-western origin, having low income, being unemployed, having blue collar work, having only basic education and having a criminal record.

		Linear model			Categorical model		
		AIC	ΔAIC	W_{AIC}[a]	AIC	ΔAIC	W_{AIC}[a]
$PM_{2.5}$							
	Total	1,818,424.21	0.00	0.99	1,818,433.89	9.68	0.01
	Non-traffic	1,818,429.22	3.51	0.15	1,818,425.72	0.00	0.85
	Traffic	1,818,451.32	1.54	0.32	1,818,449.78	0.00	0.68
	Tail-pipe	1,818,450.64	3.71	0.14	1,818,446.94	0.00	0.86
	Non-tailpipe	1,818,452.94	10.06	0.01	1,818,442.87	0.00	0.99
UFP							
	Total	1,818,432.09	0.00	0.99	1,818,442.41	10.32	0.01
	Non-traffic	1,818,428.40	0.00	0.98	1,818,435.97	7.56	0.02
	Traffic	1,818,456.28	0.94	0.38	1,818,455.35	0.00	0.62
EC							
	Total	1,818,455.77	1.14	0.36	1,818,454.63	0.00	0.64
	Non-traffic	1,818,459.13	0.00	0.95	1,818,465.00	5.87	0.05
	Traffic	1,818,452.55	1.44	0.33	1,818,451.11	0.00	0.67
NO_2							
	Total	1,818,443.61	0.00	0.52	1,818,443.80	0.19	0.48
	Non-traffic	1,818,409.30	0.00	0.95	1,818,415.10	5.80	0.05
	Traffic	1,818,456.99	2.23	0.35	1,818,455.76	0.00	0.65

[a]W_{AIC}: AIC weight – probability that this model is the better of the two models

Table S10. Associations between air pollutants and MI; exposure calculated as running averages over the past 1, 5 and 10 years, expressed per IQR and per fixed unit increments. Denmark, 2005-2017, N=1,964,702.

TWA- period	IQR	HR[a] per IQR	95%CI	Unit	HR[a] per unit	95% CI
$PM_{2.5\text{-total}}$						
1 yr	1.85 µg/m^3	1.049	(1.032-1.066)	5 µg/m^3	1.137	(1.088-1.188)
5 yr	1.85 µg/m^3	1.053	(1.035-1.071)	5 µg/m^3	1.149	(1.097-1.203)
10 yr	1.85 µg/m^3	1.049	(1.032-1.065)	5 µg/m^3	1.137	(1.089-1.186)
UFP_{total}						
1 yr	4248 #/cm^3	1.035	(1.020-1.051)	10000#/cm^3	1.086	(1.047-1.125)
5 yr	4248 #/cm^3	1.040	(1.025-1.055)	10000#/cm^3	1.096	(1.059-1.133)
10 yr	4248 #/cm^3	1.035	(1.022-1.049)	10000#/cm^3	1.085	(1.051-1.120)
EC_{total}						
1 yr	0.28 µg/m^3	1.009	(0.998-1.019)	1 µg/m^3	1.031	(0.994-1.069)
5 yr	0.28 µg/m^3	1.009	(1.000-1.019)	1 µg/m^3	1.034	(1.000-1.068)
10 yr	0.28 µg/m^3	1.009	(1.001-1.017)	1 µg/m^3	1.032	(1.003-1.062)
$NO_{2\text{-total}}$						
1 yr	7.15 µg/m^3	1.024	(1.010-1.038)	10 µg/m^3	1.034	(1.014-1.053)
5 yr	7.15 µg/m^3	1.027	(1.013-1.040)	10 µg/m^3	1.037	(1.019-1.056)
10 yr	7.15 µg/m^3	1.025	(1.013-1.038)	10 µg/m^3	1.036	(1.018-1.054)

[a]: Adjusted for age, sex, calendar period, marital status, education, occupational status, ethnicity, personal and household income and percentage of parish population: living in social housing, being sole providers, of non-western origin, having low income, being unemployed, having blue collar work, having only basic education and having a criminal record.

Table S11. Sensitivity analysis of associations between MI (cases=71,285) and 5-year averages of air pollutants, total and by source. Denmark, 2005-2017, N=1,964,702. Person years: 18,309,319

	IQR	Model3[a] per IQR	Model3[a] per IQR With year of entry as strata	Model3[a] per IQR With calendar year as strata[b]	Model3[a] per IQR Year of entry=2005[c]
$PM_{2.5}$		**HR 95%CI**	**HR 95%CI**		
Total	1.85 µg/m^3	1.053 (1.035, 1.071)	1.053 (1.035, 1.071)	1.052 (1.035, 1.070)	1,044 (1,026-1,062)
Non-traffic	1.63 µg/m^3	1.051 (1.032, 1.069)	1.051 (1.032, 1.069)	1.051 (1.032, 1.069)	1,043 (1,024-1,062)
Traffic	0.37 µg/m^3	1.011 (1.003, 1.018)	1.011 (1.003, 1.018)	1.011 (1.003, 1.018)	1,008 (1,001-1,016)
Tailpipe	0.24 µg/m^3	1.012 (1.004, 1.020)	1.012 (1.004, 1.020)	1.012 (1.004, 1.020)	1,010 (1,002-1,018)
Non-tailpipe	0.12 µg/m^3	1.008 (1.002, 1.014)	1.008 (1.002, 1.014)	1.008 (1.002, 1.014)	1,005 (0,999-1,011)
UFP					
Total	4248 #/cm^3	1.040 (1.025, 1.055)	1.040 (1.025, 1.055)	1.039 (1.024, 1.054)	1,036 (1,021-1,052)
Non-traffic	2769#/cm^3	1.034 (1.022, 1.046)	1.034 (1.022, 1.046)	1.034 (1.022, 1.046)	1,033 (1,021-1,045)
Traffic	1698#/cm^3	1.011 (0.999, 1.024)	1.011 (0.999, 1.024)	1.011 (0.999, 1.024)	1,007 (0,994-1,020)
EC					
Total	0.28 µg/m^3	1.009 (1.000, 1.019)	1.009 (1.000, 1.019)	1.009 (1.000, 1.018)	1,008 (0,998-1,017)
Non-traffic	0.12 µg/m^3	1.001 (0.996, 1.007)	1.001 (0.996, 1.007)	1.001 (0.996, 1.007)	1,001 (0,995-1,007)
Traffic	0.17 µg/m^3	1.013 (1.003, 1.023)	1.013 (1.003, 1.023)	1.013 (1.003, 1.023)	1,010 (1,000-1,020)
NO_2					
Total	7.15 µg/m^3	1.027 (1.013, 1.040)	1.027 (1.013, 1.040)	1.026 (1.012, 1.039)	1,020 (1,007-1,034)
Non-traffic	2.68 µg/m^3	1.048 (1.034, 1.062)	1.048 (1.034, 1.062)	1.048 (1.034, 1.062)	1,043 (1,029-1,057)
Traffic	5.17 µg/m^3	1.009 (0.998, 1.020)	1.009 (0.998, 1.020)	1.009 (0.998, 1.020)	1,004 (0,993-1,016)

[a]: adjusted for age, sex and calendar year (in 2 year categories), marital status, education, occupational status, ethnicity and personal and household income, area level percentage of population: living in social housing, being sole providers, of non-western origin, having low income, being unemployed, having blue collar work, having only basic education and having a criminal record.

[b]: Running calendar year in 2-year categories included as strata instead of as covariate

[c]: Analysis restricted to people ≥ 50 year of age in 2005, i.e. with year of entry=2005

Table S12. Annual contributions from different SNAP source categories to Danish air pollution in 2010. Note that contributions from ships have been singled out from SNAP 08: Other mobile sources and machinery.[2-4]

Snap category	$PM_{2.5}$ 10^{21} Particles/year	UFP Kiloton/Year
01: Combustion in energy and transformation industries	3,546	1.54
02: Non-industrial combustion plants	63,904	21.09
03: Combustion in manufacturing industry	12,986	0.55
04: Production processes	10,644	2.91
05: Extraction/distribution of fossil fuels and geothermal energy	1,042	0.21
06: Solvents and other product use	3,547	1.12
07: Road transport	33,162	5.65
08: Other mobile sources and machinery - except Ships	22,481	3.37
08: Ships	98,294	3.54
09: Waste treatment and disposal	1,019	1.35
10: Agriculture	1,726	2.25
11: Other sources and sinks	0	0

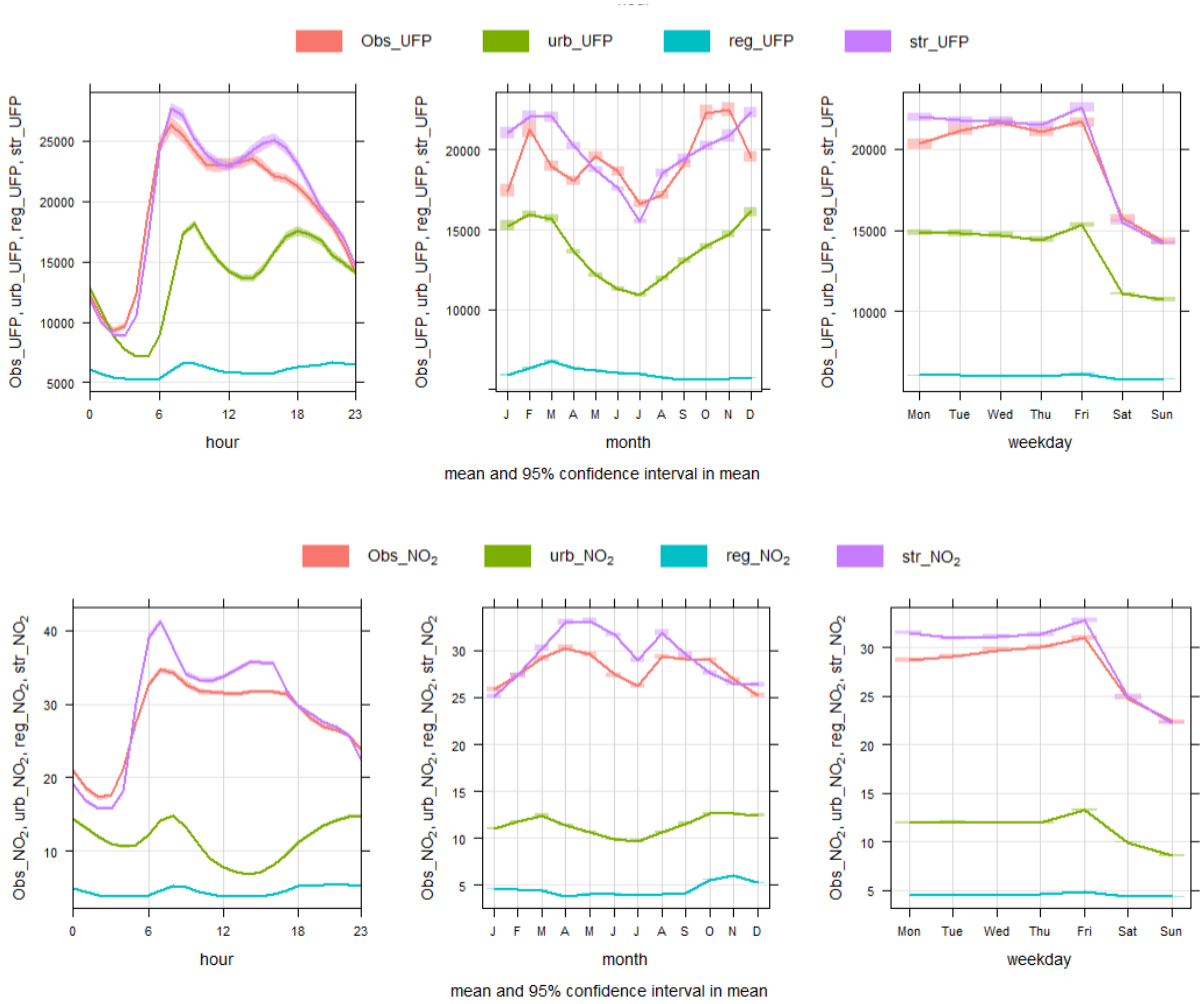

Figure S1. Modelled (purple) and measured (red) UFP and NO_2 concentrations as average time varition at three timescales (day, year, week) at the street station HCAB (Copenhagen, Denmark, dense traffic, 2002-2016).

Note:
Obs_UFP, red= measured UFP (in #/cm^3), str_UFP, purple= Modelled UFP, reg_UFP, blue= contribution to total (purple) from DEHM model. Urb_UFP, green= contribution to total (purple) from UBM model.

Obs_NO_2, red= measured NO_2 (in ppb), str_NO_2, purple= Modelled NO_2, reg_NO_2, blue= contribution to total (purple) from DEHM model. Urb_NO_2, green= contribution to total (purple) from UBM model.
European Monitoring and Evaluation Programme 2022, Geels 2021, Plejdrup 2021

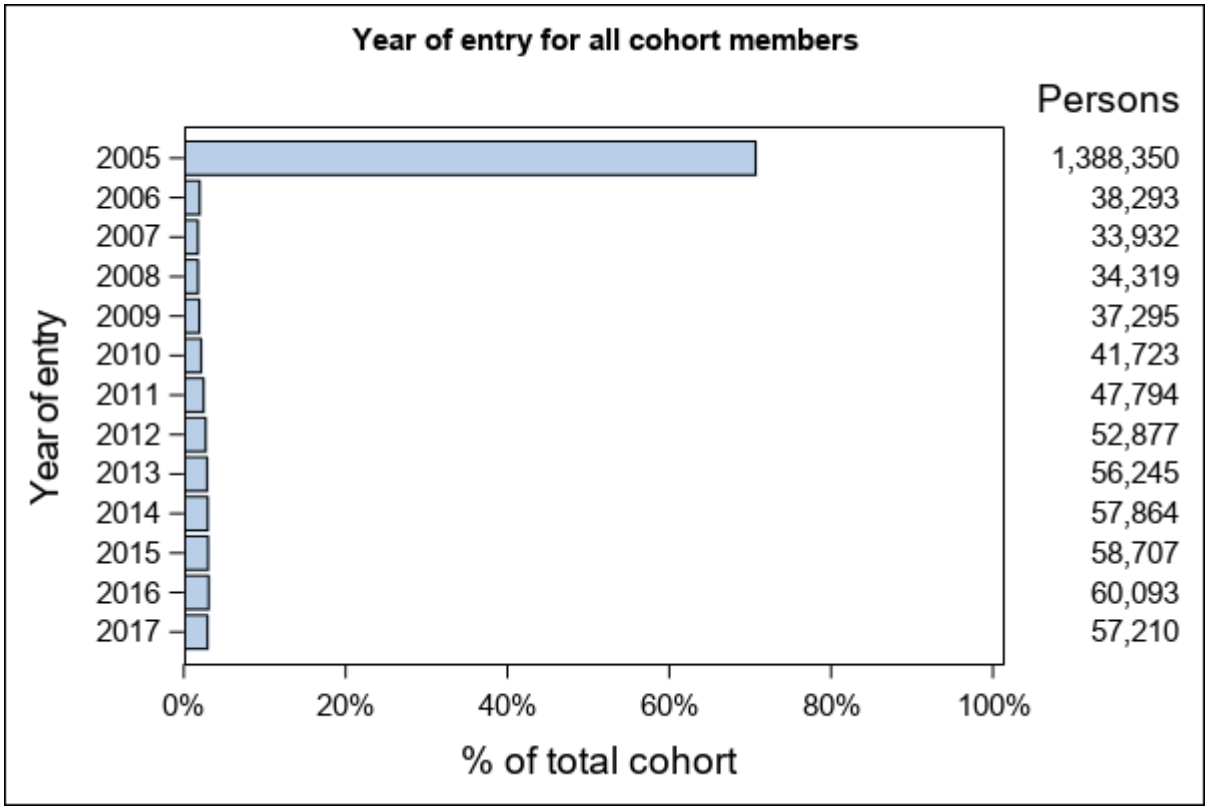

Figure S2. Year of entry for all cohort members. Year 2005 or age 50, whichever came first.

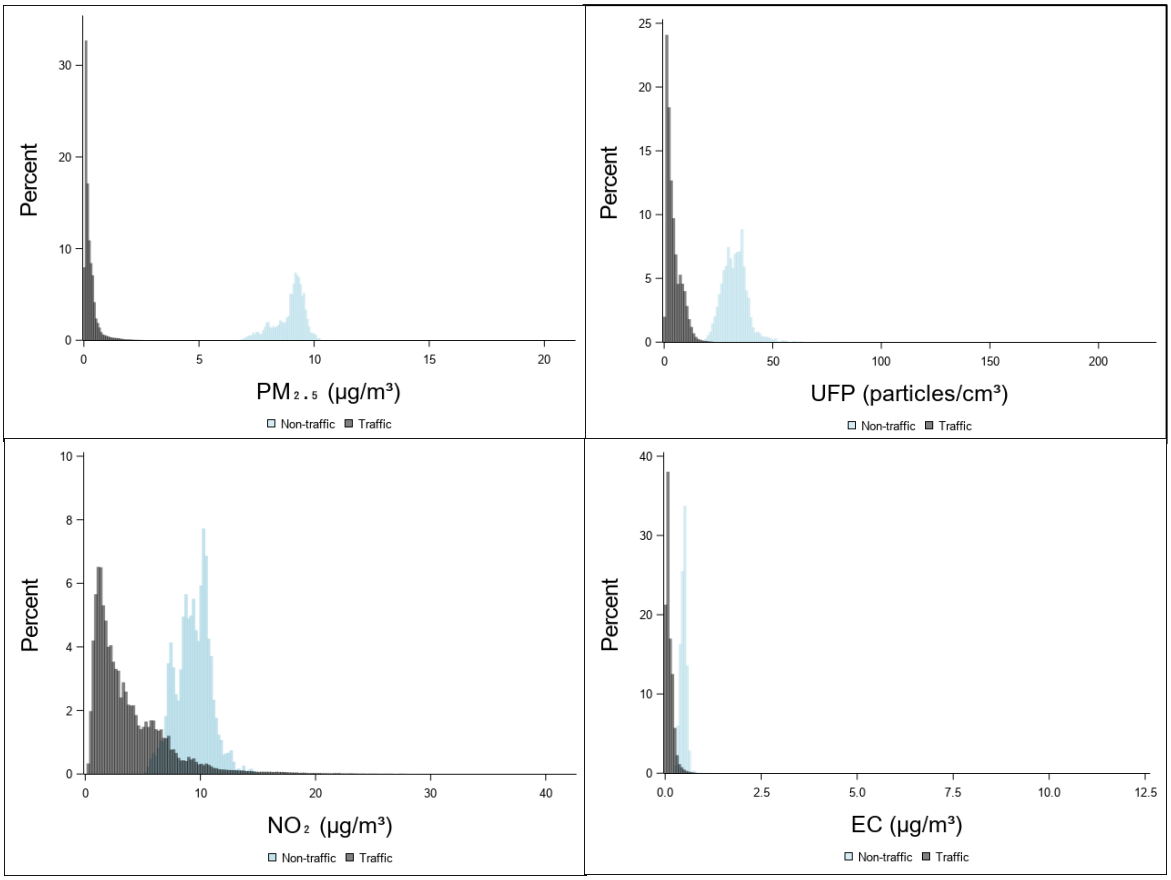

Figure S3. Distribution of $PM_{2.5}$, UFP, BC and NO_2 concentrations as 5-year average over addresses held 2010 to 2014, by source: Danish road traffic versus other sources.

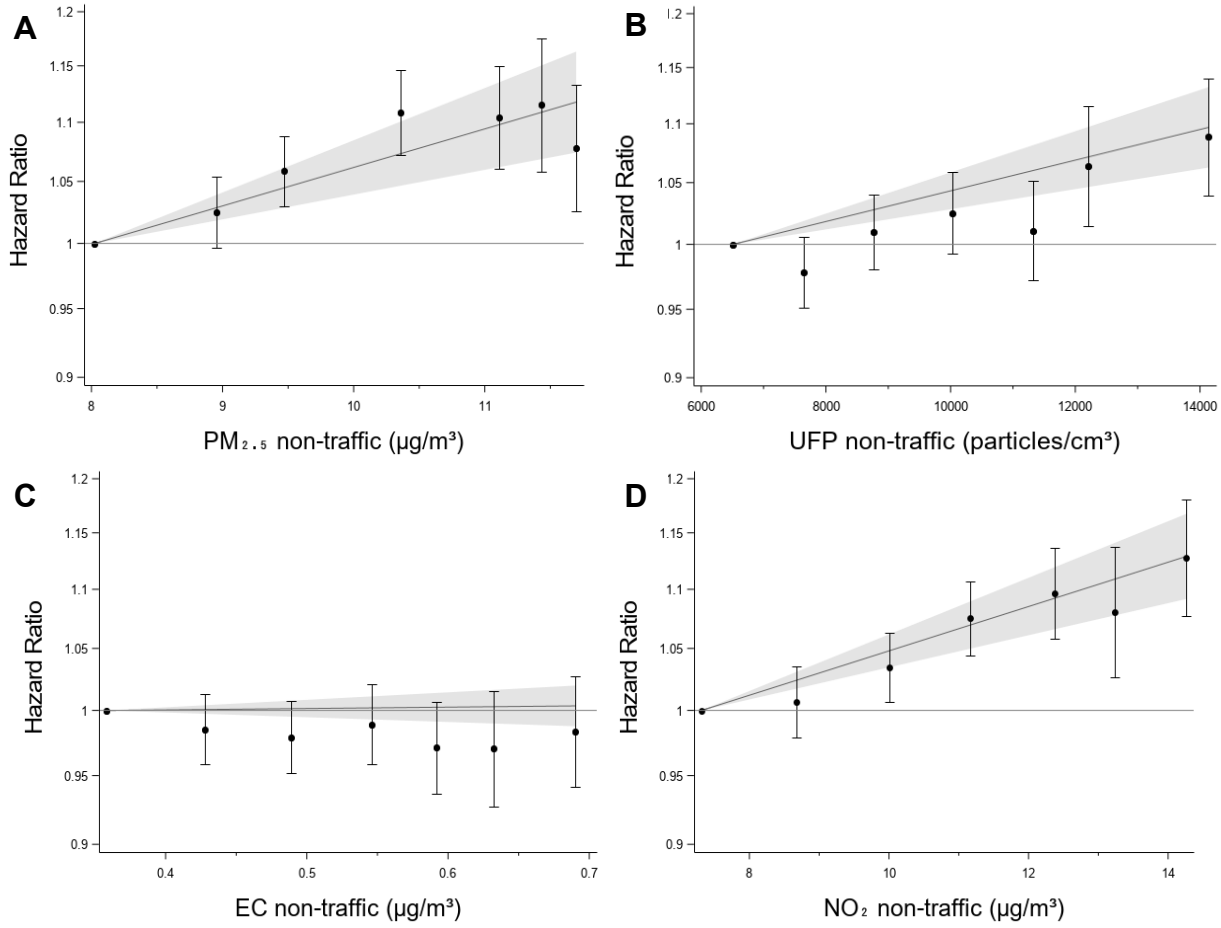

Figure S4 a-d. Associations between MI and 5-year time weighted averages of $PM_{2.5}$ (A), UFP (B), EC (C) and NO_2 (D) from non-traffic sources, specified both in categories and as linear variables in the fully adjusted model 3 (Adjusted for age, sex, calendar period, marital status, education, occupational status, ethnicity, personal and household income and percentage of parish population: living in social housing, being sole providers, of non-western origin, having low income, being unemployed, having blue collar work, having only basic education and having a criminal record) Categories defined from percentiles of exposure: <10% (reference), 10-25%, 25-50%, 50-75%, 75-90%, 90-95% and >95%, HRs and 95% confidence intervals are plotted at the median of each category. The linear estimates from Table 2 with 95% confidence intervals are plotted with the median of the categorical reference category as the null (i.e. =1). (Table S7 holds the same information in tabulated form).

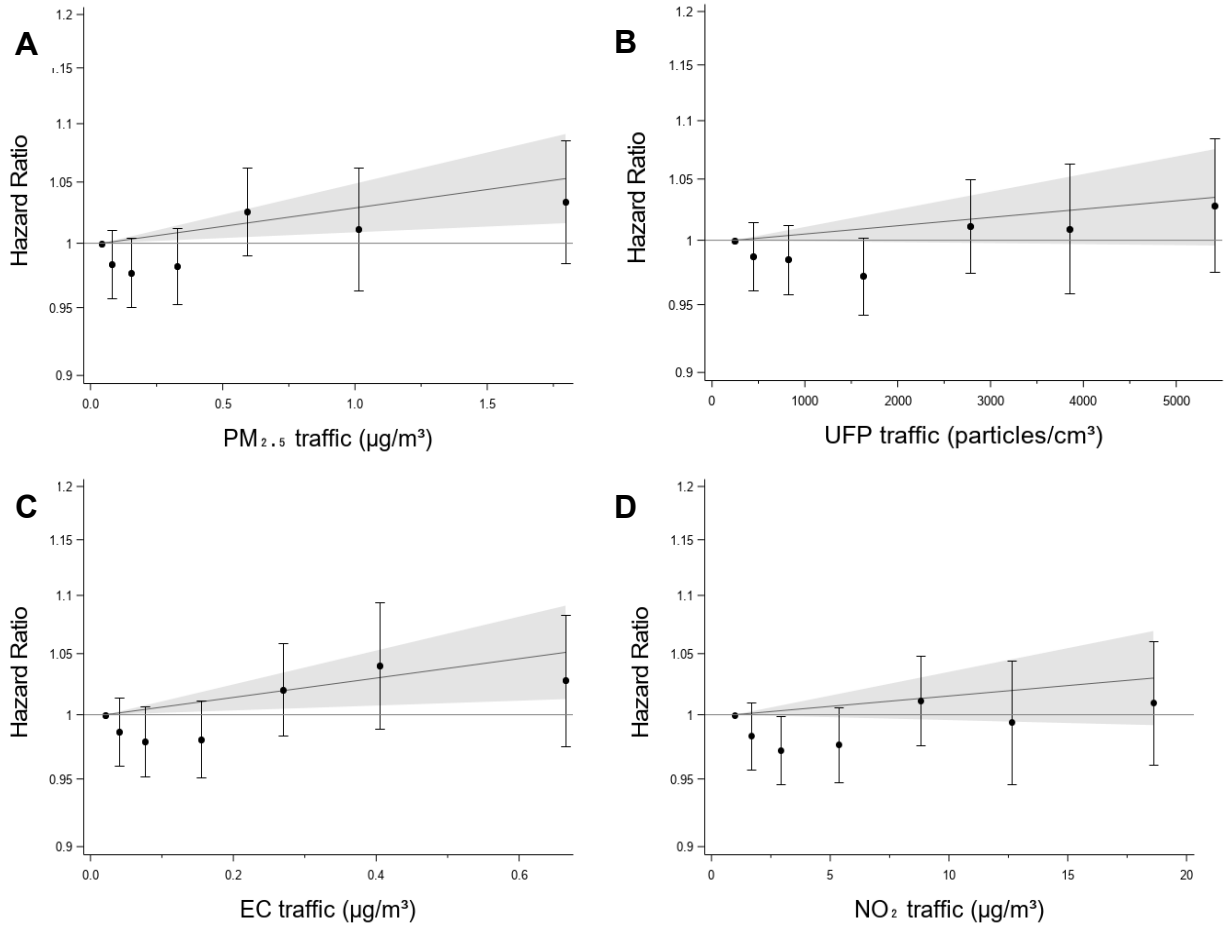

Figure S5 a-d. Associations between MI and 5-year time weighted averages of $PM_{2.5}$ (A), UFP (B), EC (C) and NO_2 (D) from traffic sources, specified both in categories and as linear variables in the fully adjusted model 3 (Adjusted for age, sex, calendar period, marital status, education, occupational status, ethnicity, personal and household income and percentage of parish population: living in social housing, being sole providers, of non-western origin, having low income, being unemployed, having blue collar work, having only basic education and having a criminal record). Categories defined from percentiles of exposure: <10% (reference), 10-25%, 25-50%, 50-75%, 75-90%, 90-95% and >95%, HRs and 95% confidence intervals are plotted at the median of each category. The linear estimates from Table 2 with 95% confidence intervals are plotted with the median of the categorical reference category as the null (i.e. =1). (Table S7 holds the same information in tabulated form).

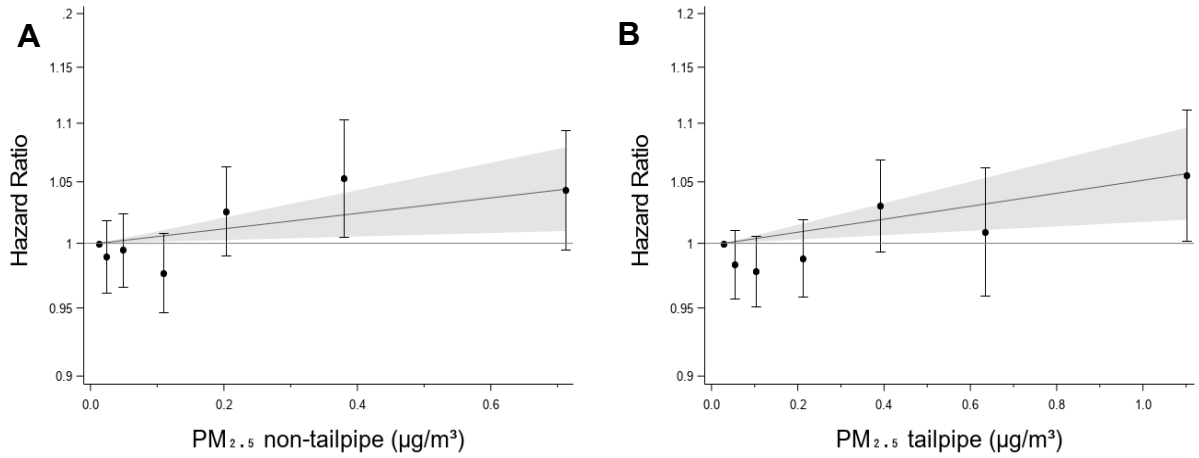

Figure S6 a-b. Associations between MI and 5-year time weighted averages of $PM_{2.5}$ from non-tailpipe (A) and tailpipe sources (B), specified both in categories and as linear variables in the fully adjusted model 3 (Adjusted for age, sex, calendar period, marital status, education, occupational status, ethnicity, personal and household income and percentage of parish population: living in social housing, being sole providers, of non-western origin, having low income, being unemployed, having blue collar work, having only basic education and having a criminal record). Categories defined from percentiles of exposure: <10% (reference), 10-25%, 25-50%, 50-75%, 75-90%, 90-95% and >95%, HRs and 95% confidence intervals are plotted at the median of each category. The linear estimates from Table 2 with 95% confidence intervals are plotted with the median of the categorical reference category as the null (i.e. =1). (Table S8 holds the same information in tabulated form).

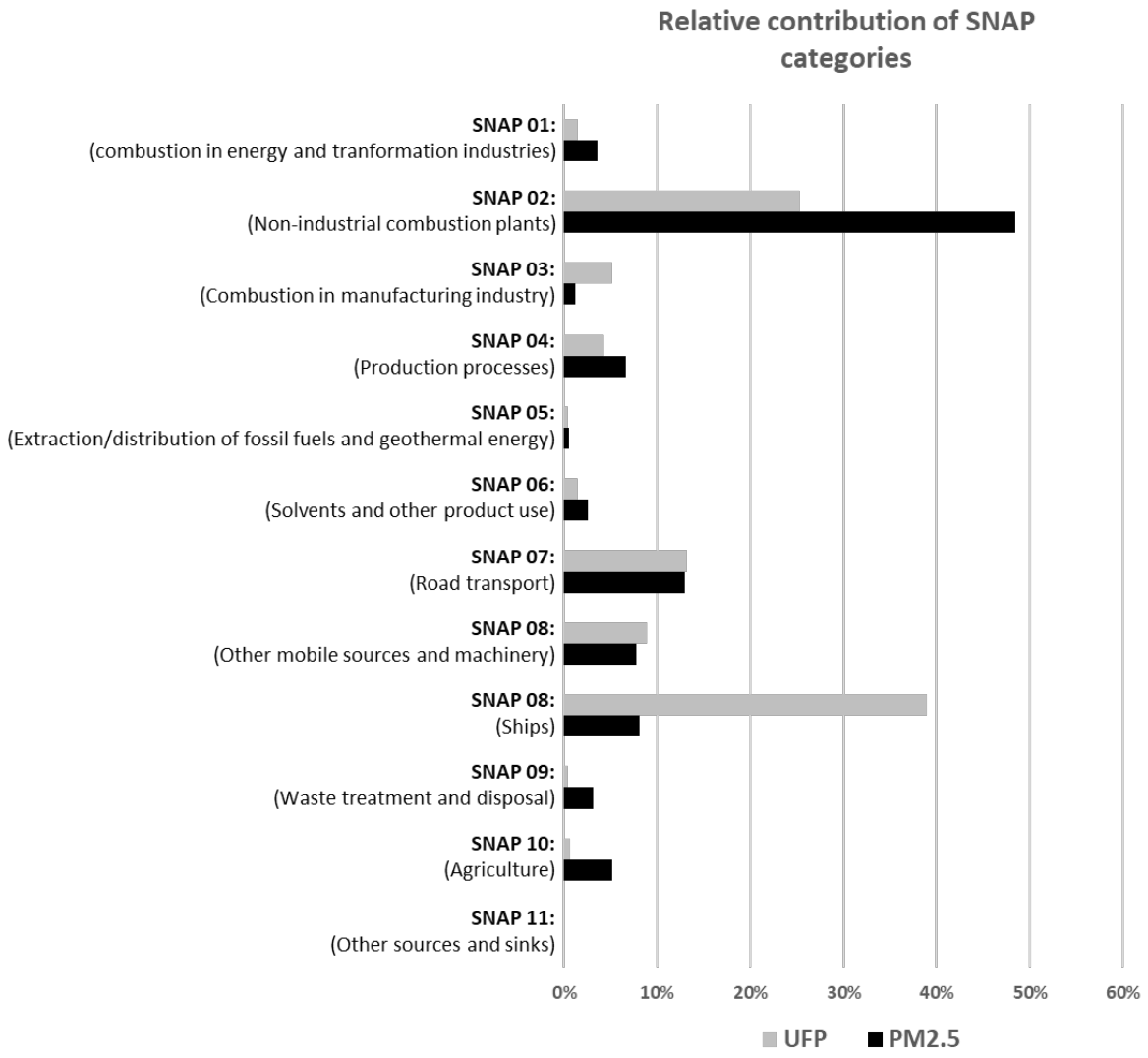

Figure S7. Contributions from different SNAP source categories to Danish air pollution in 2010. Note that contributions from ships have been singled out from SNAP 08: Other mobile sources and machinery.[2-4]

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