Environ Health Perspect

DOI: 10.1289/EHP6273

Supplemental Material

Road Traffic Noise Exposure and Filled Prescriptions for Antihypertensive Medication: A Danish Cohort Study

Jesse D. Thacher, Aslak H. Poulsen, Nina Roswall, Ulla Hvidtfeldt, Ole Raaschou-Nielsen, Steen Solvang Jensen, Matthias Ketzel, Jørgen Brandt, Kim Overvad, Anne Tjønneland, Thomas Münzel, and Mette Sørensen

Table of Contents

Figure S1. Graphical evaluation of estimated exposure-response curves (solid lines) with 95% confidence intervals (dashed lines) for exposures and selected covariates.

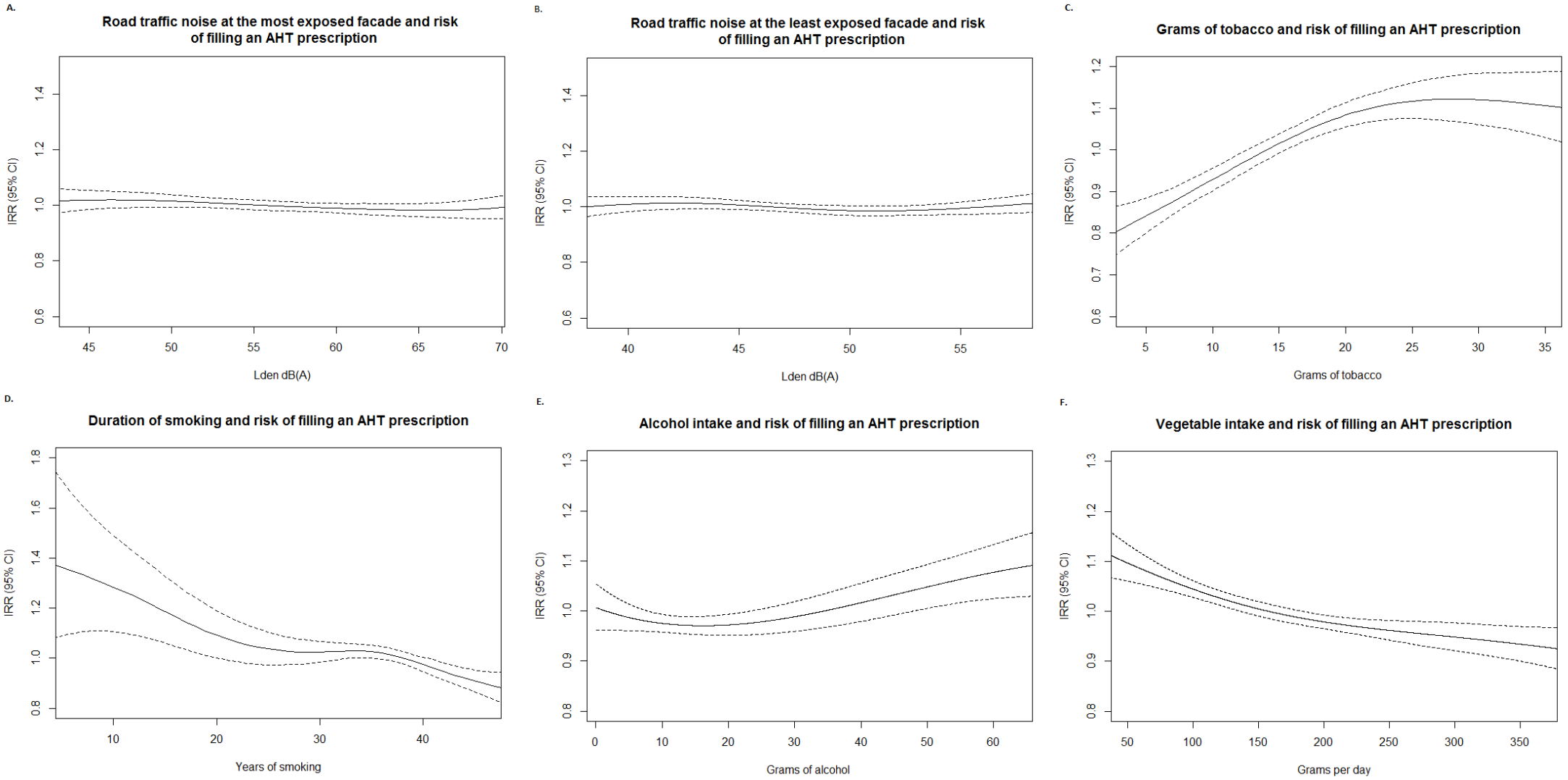
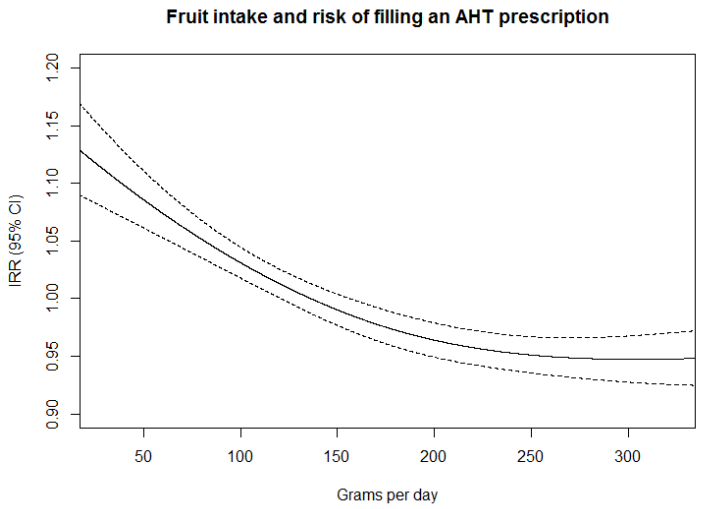
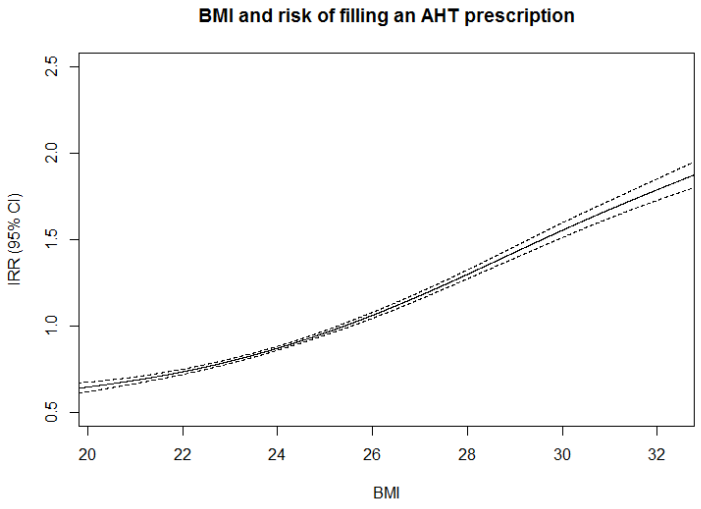


Figure S1. Continued.

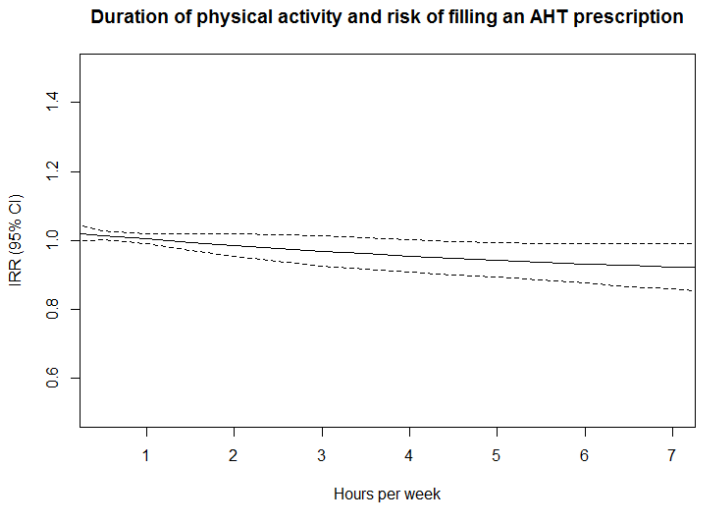
G.



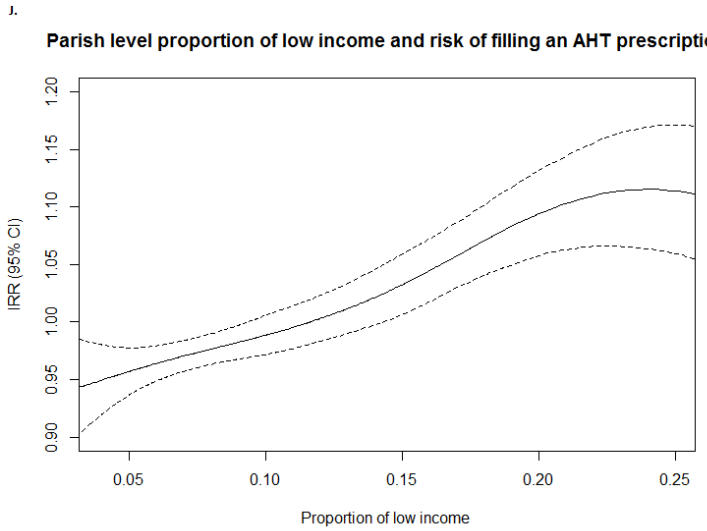
H.



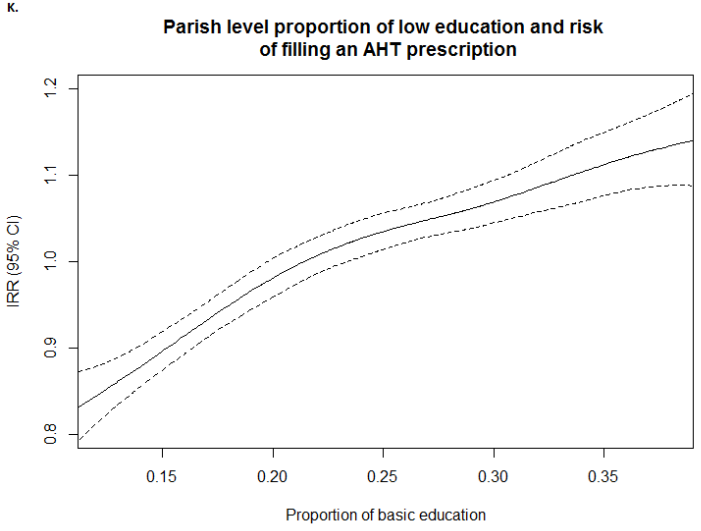
I.



J.



K.



L.

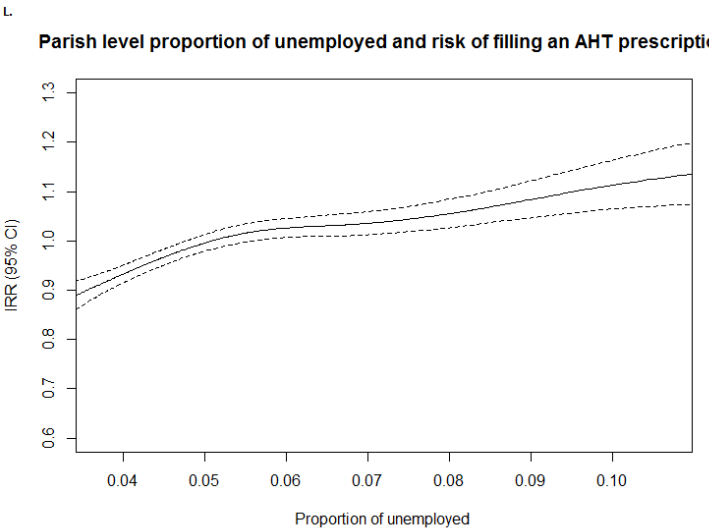
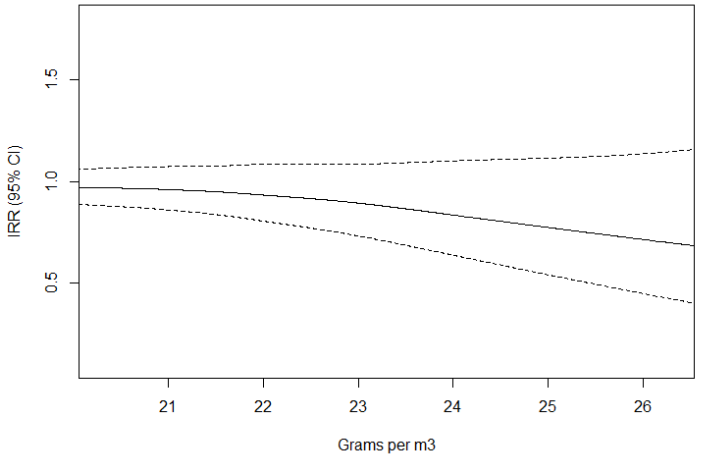


Figure S1. Continued.

M.



N.

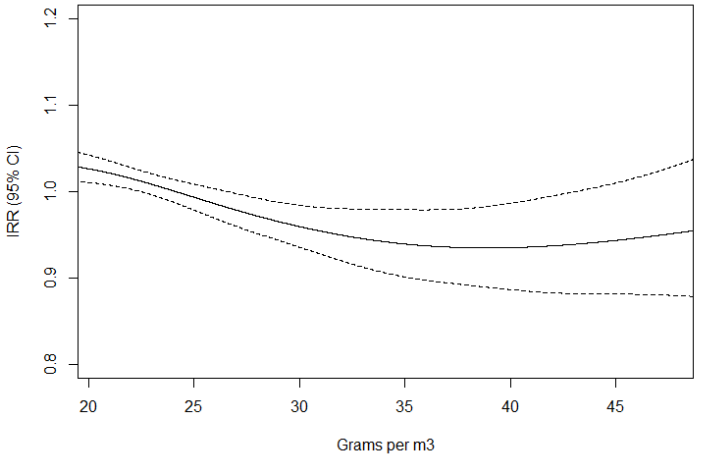


Figure S2.

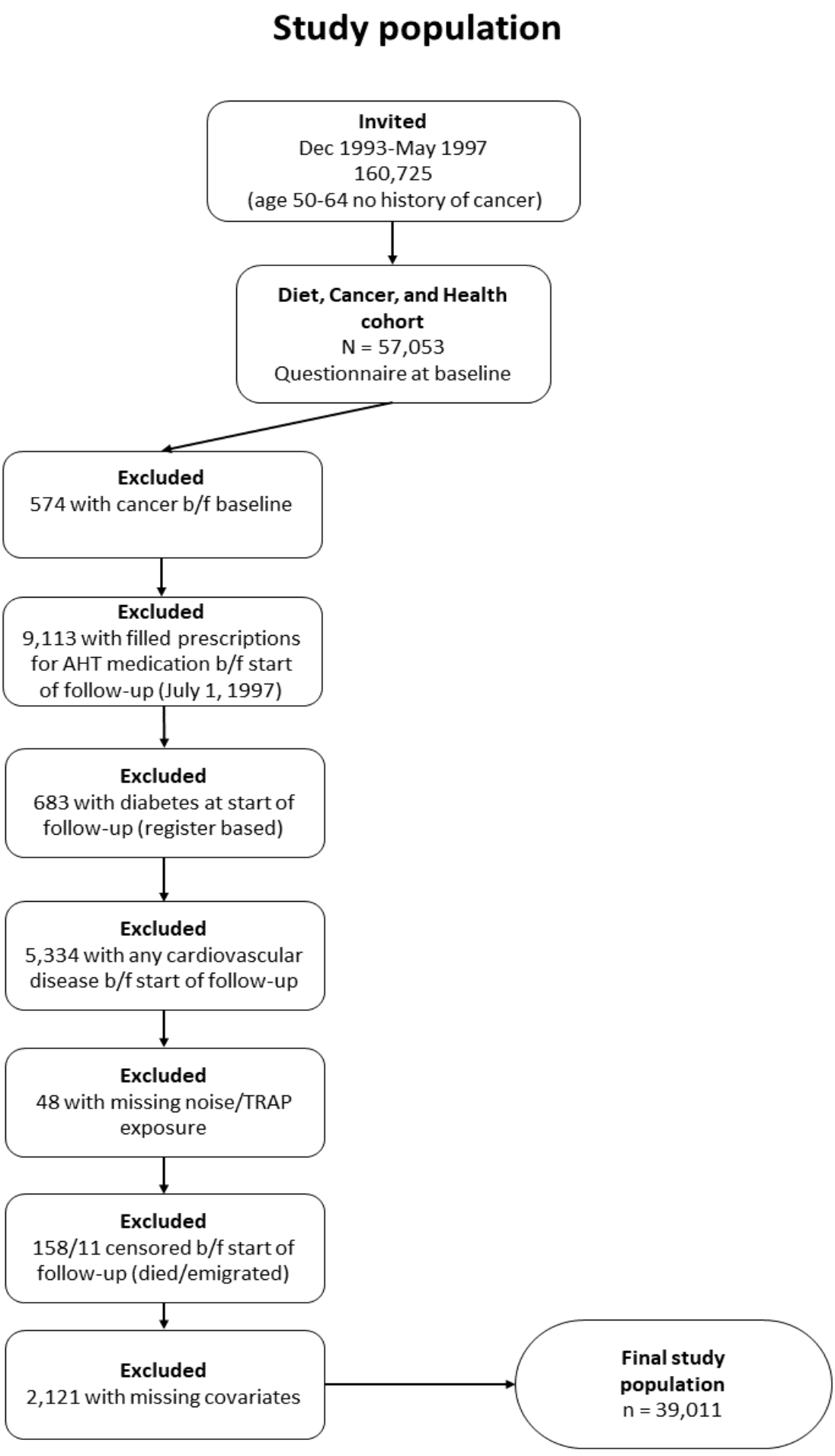

Study population
Invited
Dec 1993-May 1997
160,725
(age 50-64 no history of cancer)
Diet, Cancer, and Health cohort
N = 57,053
Questionnaire at baseline
Excluded
574 with cancer b/f baseline
Excluded
9,113 with filled prescriptions for AHT medication b/f start of follow-up (July 1, 1997)
Excluded
683 with diabetes at start of follow-up (register based)
Excluded
5,334 with any cardiovascular disease b/f start of follow-up
Excluded
48 with missing noise/TRAP exposure
Excluded
158/11 censored b/f start of follow-up (died/emigrated)
Excluded
2,121 with missing covariates
Final study population
n = 39,011

Table S1. Correlation matrix of road traffic noise and air pollution.[a]

	Road traffic noise, most exposed façade	**Road traffic noise, least exposed façade**	**$PM_{2.5}$**	**NO_2**
Road traffic noise, most exposed façade	x	0.45	0.55	0.61
Road traffic noise, least exposed façade	0.45	x	0.30	0.41
$PM_{2.5}$	0.55	0.30	x	0.82
NO_2	0.61	0.41	0.82	x

[a] Spearman correlation.

Table S2. Associations between residential exposure to traffic noise (per 10 dB) and filled prescriptions for antihypertensive medication (excluding diuretics).

Exposure to road traffic noise (per 10 dB)	Cases	Model 1a[a] (Crude) IRR (95% CI)	Model 1b[b] IRR (95% CI)	Model 1c[c] IRR (95% CI)
Most exposed façade				
1-year preceding filled prescription	18,535	1.015 (0.996-1.035)	0.996 (0.976-1.016)	0.990 (0.971-1.010)
5-year preceding filled prescription	18,535	1.017 (0.997-1.037)	0.996 (0.975-1.016)	0.989 (0.969-1.009)
10-year preceding filled prescription	18,535	1.020 (1.000-1.041)	0.997 (0.976-1.018)	0.989 (0.969-1.010)
Least exposed façade				
1-year preceding filled prescription	18,535	1.021 (0.997-1.047)	1.000 (0.976-1.026)	0.998 (0.974-1.024)
5-year preceding filled prescription	18,535	1.020 (0.995-1.046)	0.998 (0.973-1.023)	0.995 (0.971-1.021)
10-year preceding filled prescription	18,535	1.021 (0.995-1.047)	0.996 (0.971-1.023)	0.994 (0.968-1.020)

[a] Sex, and calendar year.

[b] As model 1a, and further adjusted for level of education, disposable income, cohabitation, area-level proportion of low income, basic education, and unemployment.

[c] As model 1b, and further adjusted for, smoking status, smoking duration, smoking intensity, alcohol intake, abstainers, sport during leisure time (y/n), sport (hrs/week), vegetable intake, and fruit intake.

Table S3. Associations between residential exposure to traffic noise (per 10 dB) and filled prescriptions for antihypertensive medication adjusted for air pollution.

		Model 1c[a]	Model 2a[b]	Model 2b[c]
Exposure to traffic noise (per 10 dB)	**Cases**	**IRR (95% CI)**	**IRR (95% CI)**	**IRR (95% CI)**
Road traffic noise, most exposed façade				
1-year preceding filled prescription	21,241	0.998 (0.980-1.017)	1.003 (0.984-1.024)	1.003 (0.981-1.026)
5-year preceding filled prescription	21,241	0.998 (0.979-1.017)	1.008 (0.987-1.029)	0.996 (0.972-1.019)
10-year preceding filled prescription	21,241	0.999 (0.980-1.019)	1.037 (1.015-1.060)	1.002 (0.978-1.027)
Road traffic noise, least exposed façade				
1-year preceding filled prescription	21,241	1.003 (0.980-1.026)	1.005 (0.982-1.029)	1.006 (0.982-1.031)
5-year preceding filled prescription	21,241	1.001 (0.977-1.025)	1.005 (0.981-1.029)	1.000 (0.976-1.025)
10-year preceding filled prescription	21,241	1.001 (0.977-1.026)	1.014 (0.990-1.039)	1.003 (0.978-1.029)

[a] Adjusted for sex, calendar year, level of education, disposable income, cohabitation, area-level proportion of low income, basic education, and unemployment, smoking status, smoking duration, smoking intensity, alcohol intake, abstainers, sport during leisure time (y/n), sport (hrs/week), vegetable intake, and fruit intake.
[b] As model 1c, and further adjusted for $PM_{2.5}$.
[c] As model 1c, and further adjusted for NO_2.

Table S4. Association between categories of exposure to road traffic (L_{den}) at the most exposed façade and filled prescription for antihypertensive medication.

10-year mean exposure to traffic noise, most exposed façade	**IRR (95% CI)**
<52 dB(A)	Reference
52-55 dB(A)	0.98 (0.94-1.02)
55-58 dB(A)	1.00 (0.96-1.05)
58-61 dB(A)	0.99 (0.95-1.03)
61-64 dB(A)	0.99 (0.94-1.03)
64-67 dB(A)	0.98 (0.92-1.03)
67-70 dB(A)	0.99 (0.93-1.06)
≥70 dB(A)	1.06 (0.98-1.14)

Adjusted for sex, calendar year, level of education, disposable income, cohabitation, area-level proportion of low income, basic education and unemployment, smoking status, smoking duration, smoking intensity, alcohol intake, abstainers, sport during leisure time (y/n), sport (hrs/week), vegetables intake, and fruit intake.

Table S5. Association between categories of exposure to road traffic (L_{den}) at the least exposed façade and filled prescriptions for antihypertensive medication.

10-year mean exposure to traffic noise, least exposed façade	**IRR (95% CI)**
<45 dB(A)	Reference
45-48 dB(A)	0.97 (0.93-1.01)
48-51 dB(A)	0.97 (0.93-1.01)
51-54 dB(A)	1.01 (0.97-1.06)
54-57 dB(A)	0.97 (0.93-1.02)
57-60 dB(A)	1.00 (0.94-1.07)
60-63 dB(A)	1.03 (0.93-1.14)
≥63 dB(A)	1.01 (0.87-1.18)

Adjusted for sex, calendar year, level of education, disposable income, cohabitation, area-level proportion of low income, basic education and unemployment, smoking status, smoking duration, smoking intensity, alcohol intake, abstainers, sport during leisure time (y/n), sport (hrs/week), vegetables intake, and fruit intake.

Figure S3. Distribution of residential exposure to road traffic (L_{den}) at baseline.