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Supplemental Material

Long-Term Ambient Residential Traffic–Related Exposures and Measurement Error–Adjusted Risk of Incident Lung Cancer in the Netherlands Cohort Study on Diet and Cancer

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Table S1: Associations of Increases in Black Smoke, NO₂, or PM_{2.5} Exposures or Baseline Address Traffic Measures with Incident Lung Cancer 1986-2003 Overall and by Subtype; Sensitivity Models Adjusted only for Covariates that Change Effect Estimates by 10% or More (Parsimonious) and Multivariable Models Additionally Adjusted for Clustering by COROP Area.

Exposure	All Lung Cancer HR (95%CI)	Squamous Cell Carcinoma HR (95%CI)	Small Cell Carcinoma HR (95%CI)	Large Cell Carcinoma HR (95%CI)	Adenocarcinoma HR (95%CI)
Number of cases	3,355	1,298	573	498	737
Black smoke (10 µg/m ³)					
Parsimonious ^a	1.16 (1.02, 1.32)	1.13 (0.93, 1.37)	1.20 (0.92, 1.56)	1.22 (0.91, 1.61)	1.17 (0.93, 1.47)
Multivariable model + clustering ^b	1.13 (1.00, 1.28)	1.17 (0.96, 1.42)	1.24 (0.96, 1.60)	1.06 (0.75, 1.51)	1.16 (1.02, 1.32)
NO ₂ (30 µg/m ³)					
Parsimonious ^a	1.28 (1.07, 1.53)	1.21 (0.94, 1.57)	1.29 (0.90, 1.86)	1.31 (0.88, 1.93)	1.33 (0.96, 1.83)
Multivariable model ^b	1.27 (1.07, 1.51)	1.37 (1.03, 1.83)	1.37 (0.97, 1.93)	1.10 (0.66, 1.83)	1.28 (1.07, 1.53)
PM _{2.5} (10 µg/m ³)					
Parsimonious ^a	1.16 (0.92, 1.45)	1.13 (0.81, 1.59)	1.08 (0.68, 1.70)	1.32 (0.80, 2.18)	1.14 (0.75, 1.72)
Multivariable model + clustering ^b	1.14 (0.90, 1.44)	1.22 (0.84, 1.77)	1.10 (0.69, 1.75)	1.20 (0.62, 2.32)	1.16 (0.92, 1.45)
Living near a major road					
Parsimonious ^a	1.13 (0.93, 1.38)	1.08 (0.81, 1.45)	1.38 (0.95, 2.01)	1.30 (0.87, 1.94)	1.06 (0.76, 1.48)
Multivariable model + clustering ^c	1.13 (0.96, 1.31)	1.08 (0.84, 1.40)	1.39 (0.99, 1.97)	1.36 (0.93, 2.00)	1.13 (0.93, 1.38)
Traffic intensity on the nearest road (10,000 mvh/24h)					
Parsimonious ^a	1.02 (0.93, 1.12)	1.03 (0.92, 1.16)	1.07 (0.87, 1.30)	1.02 (0.85, 1.21)	0.99 (0.86, 1.14)
Multivariable model + clustering ^c	1.02 (0.94, 1.10)	1.03 (0.91, 1.16)	1.06 (0.89, 1.25)	1.02 (0.85, 1.23)	1.02 (0.93, 1.12)
Traffic intensity in a 100-m buffer (335,000 mvh/24 h)					
Parsimonious ^a	1.10 (0.98, 1.25)	1.17 (0.98, 1.39)	1.15 (0.90, 1.47)	1.00 (0.76, 1.31)	1.10 (0.89, 1.37)
Multivariable model + clustering ^c	1.09 (0.99, 1.21)	1.16 (0.99, 1.36)	1.15 (0.90, 1.46)	1.06 (0.80, 1.39)	1.10 (0.98, 1.25)

^aAdjusted for age and sex, cigarette, cigar, and pipe smoking status, years and amount of cigarette, cigar, and pipe smoking, marital status, educational status, occupational status, alcohol consumption, intake of fruits, vegetables, and fish, and neighborhood- and COROP-level SES.

^bAdjusted for age, sex, clustering by COROP, cigarette, cigar, and pipe smoking status, years and amount of cigarette, cigar, and pipe smoking, marital status, secondhand smoke exposure, educational status, occupational status, BMI, alcohol consumption, intake of fruits, vegetables, and fish, and neighborhood- and COROP-level SES. ^cAdjusted for all covariates in the default multivariable model plus regional and urban background black smoke.

Table S2: Literature Summary of Associations of PM_{2.5} and Lung-Cancer Calculated for each 10 µg/m³ Increase and Presented in Increasing Hazard Ratio Order.

Study	RR (95%CI)	Study Location
(Lipsett et al. 2011)	0.95 (0.70,1.28)	United States
(Cao et al. 2011)	1.03 (1.00,1.07)	China
(Cesaroni et al. 2013)	1.05 (1.01,1.10)	Italy
(Puett et al. 2014)	1.06 (0.91,1.25)	United States
(Krewski et al. 2009)	1.08 (1.03,1.14)	United States
(Carey et al. 2013)	1.11 (0.85,1.43)	England
(Jerrett et al. 2013)	1.12 (0.92,1.37)	United States
Current study – multivariable models	1.17 (0.93,1.47)	Netherlands
(Hart et al. 2011)	1.17 (0.93,1.48)	United States
(Katanoda et al. 2011)	1.24 (1.12,1.37)	Japan
(Hystad et al. 2013)	1.29 (0.95,1.76)	Canada
Current Study – measurement error adjusted	1.37 (0.86,2.17)	Netherlands
(Lepeule et al. 2012)	1.37 (1.07,1.75)	United States
(McDonnell et al. 2000)	1.39 (0.79,2.46)	United States
(Raaschou-Nielsen et al. 2013)	1.39 (0.92,2.10)	Europe

The effect estimates from (Naess et al. 2007) could not be converted to units of 10 µg/m³ and are therefore not shown.

Table S3: Literature Summary of Associations of NO₂ and Lung-Cancer per 30 µg/m³ Increase and Presented in Increasing Hazard Ratio Order.

Study	RR (95%CI)	Study Location
(Raaschou-Nielsen et al. 2013)	0.97 (0.80, 1.17)	Europe
(Krewski et al. 2009)	0.98 (0.95, 1.02)	United States
(Lipsett et al. 2011)	1.00 (0.64, 1.56)	United States
(Cesaroni et al. 2013)	1.12 (1.06, 1.19)	Italy
(Hart et al. 2011)	1.15 (0.92, 1.43)	United States
(Carey et al. 2013)	1.18 (1.00, 1.39)	England
(Hystad et al. 2013)	1.18 (1.00, 1.40)	Canada
(Katanoda et al. 2011)	1.28 (1.16, 1.42)	Japan
Current Study	1.29 (1.08, 1.54)	Netherlands
(Nyberg et al. 2000)	1.33 (0.91, 1.94)	Sweden
(Jerrett et al. 2013)	1.50 (1.08, 2.09)	United States
(Abbey et al. 1999), men	1.62 (0.94, 2.79)	United States
(Yorifuji et al. 2013)	1.73 (1.09, 2.73)	Japan
(Heinrich et al. 2013)	2.03 (0.86, 4.83)	Germany
(Abbey et al. 1999), women	2.30 (1.12, 4.73)	United States
(Filleul et al. 2005)	3.24 (1.16, 9.08)	France
(Villeneuve et al. 2014)	4.67(1.78, 12.24)	Canada

The effect estimates from (Naess et al. 2007) could not be converted to units of 30 µg/m³ and are therefore not included.

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