

## Supplemental Digital Content

Parks RM, Nunez Y, Balalian A, Gibson EA, Hansen J, Raaschou-Nielsen O, Ketzel M, Khan J, Brandt J, Vermeulen R, Peters S, Goldsmith J, Re DB, Weisskopf MG, Kioumourtzoglou MA, Long-term traffic-related air pollutant exposure and amyotrophic lateral sclerosis diagnosis in Denmark: A Bayesian hierarchical analysis.

**eTable 1.** Summary of 5-year average pollutant concentrations of controls by socioeconomic status (all in  $\mu\text{g}/\text{m}^3$ ).

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**eTable 4.** Summary of 5-year average pollutant concentrations of controls by place of birth (all in  $\mu\text{g}/\text{m}^3$ ).

**eFigure 1.** Sensitivity of percentage change in odds of ALS diagnosis to (B) inclusion of  $\text{O}_3$ ; (C) inclusion of parish-level SES; (D-F) single-pollution models; (G-N) various hyperpriors; and (O-P) more iterations per chain.

**eFigure 2.** Average concentration of included pollutants ( $\text{NO}_x$ , EC,  $\text{PM}_{2.5}$ , CO,  $\text{O}_3$ ) in 1 km x 1 km resolution for year 2000 (middle of study period 1989-2013).

This supplementary material has been provided by the authors to give readers additional information about their work.

**eTable 1.** Summary of 5-year average pollutant concentrations of controls by socioeconomic status (all in  $\mu\text{g}/\text{m}^3$ ).

Pollutant	Overall, N = 19,298 <sup>1</sup>	Group 1 (Highest), N = 1,886 <sup>1</sup>	Group 2, N = 2,340 <sup>1</sup>	Group 3, N = 3,575 <sup>1</sup>	Group 4, N = 5,522 <sup>1</sup>	Group 5 (Lowest), N = 3,702 <sup>1</sup>	Group 9 (Unknown), N = 2,273 <sup>1</sup>
<b>NOX</b>	27 (20)	29 (20)	27 (20)	25 (17)	27 (20)	27 (19)	30 (23)
<b>CO</b>	237 (105)	244 (103)	233 (104)	225 (89)	237 (104)	237 (102)	258 (130)
<b>EC</b>	0.85 (0.42)	0.89 (0.42)	0.84 (0.42)	0.79 (0.37)	0.85 (0.42)	0.84 (0.41)	0.92 (0.48)
<b>non-EC PM2.5</b>	11.76 (2.37)	11.75 (2.21)	11.54 (2.24)	11.58 (2.30)	11.69 (2.34)	11.93 (2.43)	12.13 (2.62)
<b>O3</b>	52.0 (6.0)	51.1 (5.9)	52.0 (5.9)	53.0 (5.6)	51.9 (5.9)	52.2 (5.9)	50.7 (6.4)

<sup>1</sup>Mean (SD)

**eTable 2.** Summary of 5-year average pollutant concentrations of controls by civil status (all in  $\mu\text{g}/\text{m}^3$ ).

Pollutant	Overall, N = 19,298 <sup>1</sup>	Married, N = 11,747 <sup>1</sup>	Divorced, N = 2,270 <sup>1</sup>	Widower, N = 3,498 <sup>1</sup>	Never married, N = 1,783 <sup>1</sup>
<b>NOX</b>	27 (20)	25 (17)	31 (23)	30 (23)	30 (22)
<b>CO</b>	237 (105)	228 (92)	252 (124)	252 (123)	247 (114)
<b>EC</b>	0.85 (0.42)	0.81 (0.37)	0.92 (0.48)	0.90 (0.48)	0.91 (0.46)
<b>non-EC PM2.5</b>	11.76 (2.37)	11.68 (2.33)	11.71 (2.33)	12.09 (2.51)	11.63 (2.31)
<b>O3</b>	52.0 (6.0)	52.5 (5.6)	50.8 (6.4)	51.3 (6.5)	51.1 (6.3)

<sup>1</sup>Mean (SD)

**eTable 3.** Summary of 5-year average pollutant concentrations of controls by last reported place of residence (all in µg/m<sup>3</sup>).

Pollutant	Overall, N = 19,298 <sup>1</sup>	Greater Copenhagen, N = 1,552 <sup>1</sup>	Big cities of Denmark, N = 7,795 <sup>1</sup>	Rest of Denmark, N = 9,946 <sup>1</sup>	Greenland, N = 5 <sup>1</sup>
<b>NOX</b>	27 (20)	53 (33)	28 (18)	23 (15)	15 (4)
<b>CO</b>	237 (105)	379 (184)	237 (91)	216 (77)	181 (20)
<b>EC</b>	0.85 (0.42)	1.39 (0.65)	0.87 (0.38)	0.75 (0.32)	0.59 (0.14)
<b>non-EC PM2.5</b>	11.76 (2.37)	12.96 (2.67)	11.80 (2.33)	11.53 (2.29)	10.42 (1.49)
<b>O3</b>	52.0 (6.0)	43.2 (6.3)	51.5 (5.2)	53.7 (5.1)	58.3 (4.7)

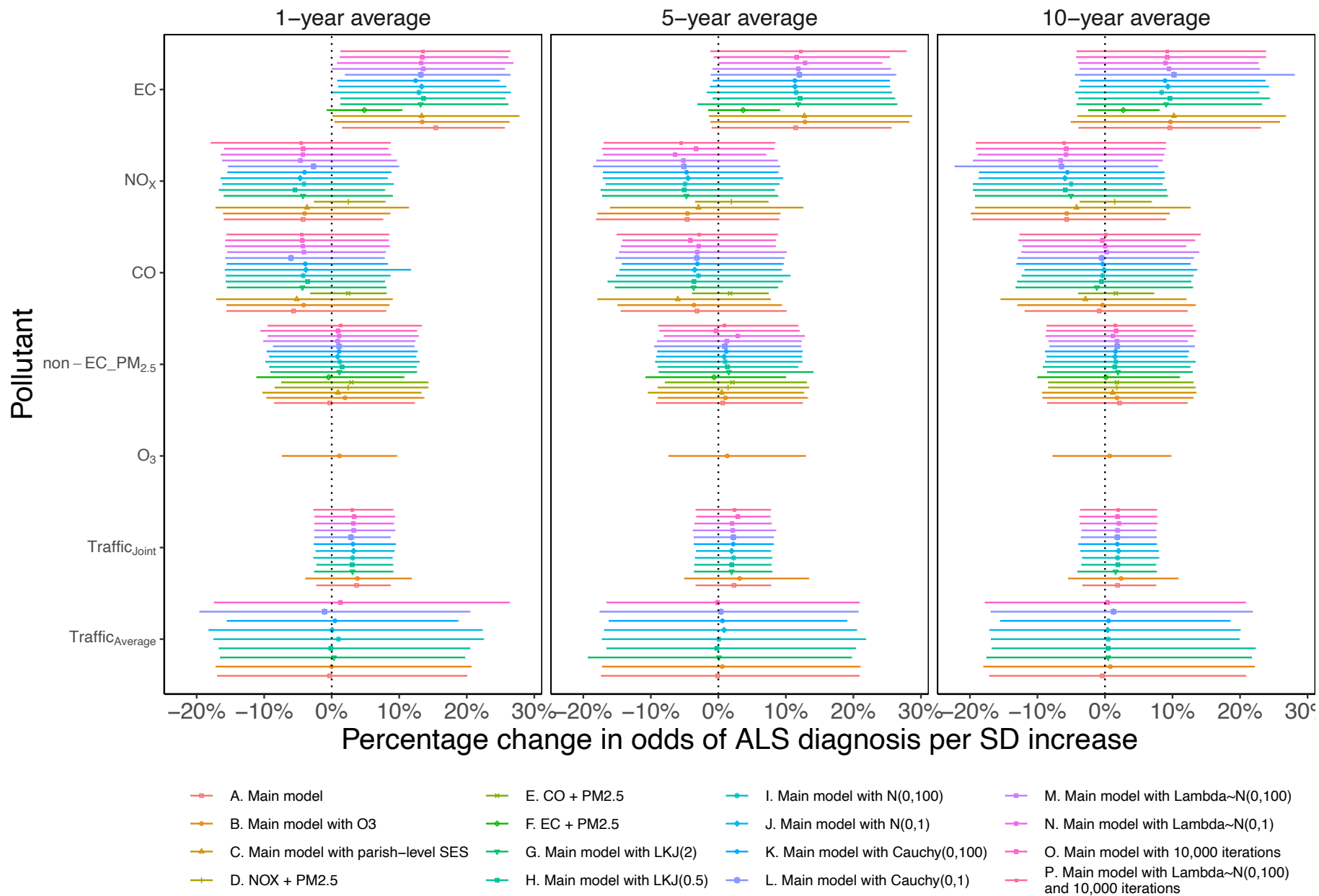
<sup>1</sup>Mean (SD)

**eTable 4.** Summary of 5-year average pollutant concentrations by place of birth (all in  $\mu\text{g}/\text{m}^3$ ).

Pollutant	Overall, N = 19,298 <sup>1</sup>	Greater Copenhagen, N = 4,027 <sup>1</sup>	Big cities of Denmark, N = 6,566 <sup>1</sup>	Rest of Denmark, N = 7,461 <sup>1</sup>	Greenland, N = 190 <sup>1</sup>	Foreign, N = 943 <sup>1</sup>	Unknown, N = 111 <sup>1</sup>
<b>NOX</b>	27 (20)	35 (25)	26 (18)	23 (16)	30 (17)	33 (22)	28 (18)
<b>CO</b>	237 (105)	275 (136)	230 (96)	220 (86)	254 (92)	256 (111)	242 (96)
<b>EC</b>	0.85 (0.42)	1.01 (0.51)	0.83 (0.40)	0.76 (0.35)	0.92 (0.36)	0.97 (0.43)	0.84 (0.36)
<b>non-EC PM2.5</b>	11.76 (2.37)	12.07 (2.39)	11.66 (2.35)	11.68 (2.38)	12.07 (2.32)	11.59 (2.12)	12.32 (2.68)
<b>O3</b>	52.0 (6.0)	48.9 (6.4)	52.4 (5.5)	53.6 (5.3)	50.3 (5.6)	49.3 (5.8)	52.2 (5.8)

<sup>1</sup>Mean (SD)

**eFigure 1.** Sensitivity of percentage change in odds of ALS diagnosis to (B) inclusion of  $O_3$ ; (C) inclusion of parish-level SES; (D-F) single-pollution models; (G-N) various hyperpriors; and (O-P) more iterations per chain.



**eFigure 2.** Average concentration of included pollutants (NO<sub>x</sub>, EC, PM<sub>2.5</sub>, CO, O<sub>3</sub>) in 1 km x 1 km resolution for year 2000 (middle of study period 1989-2013).

