**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 μg/m3).

**eTable 2.** Summary of 5-year average pollutant concentrations of controls by civil status (all in μg/m3).

**eTable 3.** Summary of 5-year average pollutant concentrations of controls by last reported place of residence (all in μg/m3).

**eTable 4.** Summary of 5-year average pollutant concentrations of controls by place of birth (all in μg/m3).

**eFigure 1.** Sensitivity of percentage change in odds of ALS diagnosis to (B) inclusion of O3; (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 (NOx, EC, PM2.5, CO, O3) 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 μg/m3).

| Pollutant | Overall, N = 19,2981 | Group 1 (Highest), N = 1,8861 | Group 2, N = 2,3401 | Group 3, N = 3,5751 | Group 4, N = 5,5221 | Group 5 (Lowest), N = 3,7021 | Group 9 (Unknown), N = 2,2731 |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **NOX** | 27 (20) | 29 (20) | 27 (20) | 25 (17) | 27 (20) | 27 (19) | 30 (23) |
| **CO** | 237 (105) | 244 (103) | 233 (104) | 225 (89) | 237 (104) | 237 (102) | 258 (130) |
| **EC** | 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) |
| **non-EC PM2.5** | 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) |
| **O3** | 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) |
| 1Mean (SD) | | | | | | | |

**eTable 2.** Summary of 5-year average pollutant concentrations of controls by civil status (all in μg/m3).

| Pollutant | Overall, N = 19,2981 | Married, N = 11,7471 | Divorced, N = 2,2701 | Widower, N = 3,4981 | Never married, N = 1,7831 |
| --- | --- | --- | --- | --- | --- |
| **NOX** | 27 (20) | 25 (17) | 31 (23) | 30 (23) | 30 (22) |
| **CO** | 237 (105) | 228 (92) | 252 (124) | 252 (123) | 247 (114) |
| **EC** | 0.85 (0.42) | 0.81 (0.37) | 0.92 (0.48) | 0.90 (0.48) | 0.91 (0.46) |
| **non-EC PM2.5** | 11.76 (2.37) | 11.68 (2.33) | 11.71 (2.33) | 12.09 (2.51) | 11.63 (2.31) |
| **O3** | 52.0 (6.0) | 52.5 (5.6) | 50.8 (6.4) | 51.3 (6.5) | 51.1 (6.3) |
| 1Mean (SD) | | | | | |

**eTable 3.** Summary of 5-year average pollutant concentrations of controls by last reported place of residence (all in μg/m3).

| Pollutant | Overall, N = 19,2981 | Greater Copenhagen, N = 1,5521 | Big cities of Denmark, N = 7,7951 | Rest of Denmark, N = 9,9461 | Greenland, N = 51 |
| --- | --- | --- | --- | --- | --- |
| **NOX** | 27 (20) | 53 (33) | 28 (18) | 23 (15) | 15 (4) |
| **CO** | 237 (105) | 379 (184) | 237 (91) | 216 (77) | 181 (20) |
| **EC** | 0.85 (0.42) | 1.39 (0.65) | 0.87 (0.38) | 0.75 (0.32) | 0.59 (0.14) |
| **non-EC PM2.5** | 11.76 (2.37) | 12.96 (2.67) | 11.80 (2.33) | 11.53 (2.29) | 10.42 (1.49) |
| **O3** | 52.0 (6.0) | 43.2 (6.3) | 51.5 (5.2) | 53.7 (5.1) | 58.3 (4.7) |
| 1Mean (SD) | | | | | |

**eTable 4.** Summary of 5-year average pollutant concentrations by place of birth (all in μg/m3).

| Pollutant | Overall, N = 19,2981 | Greater Copenhagen, N = 4,0271 | Big cities of Denmark, N = 6,5661 | Rest of Denmark, N = 7,4611 | Greenland, N = 1901 | Foreign, N = 9431 | Unknown, N = 1111 |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **NOX** | 27 (20) | 35 (25) | 26 (18) | 23 (16) | 30 (17) | 33 (22) | 28 (18) |
| **CO** | 237 (105) | 275 (136) | 230 (96) | 220 (86) | 254 (92) | 256 (111) | 242 (96) |
| **EC** | 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) |
| **non-EC PM2.5** | 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) |
| **O3** | 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) |
| 1Mean (SD) | | | | | | | |

**eFigure 1**. Sensitivity of percentage change in odds of ALS diagnosis to (B) inclusion of O3; (C) inclusion of parish-level SES; (D-F) single-pollution models; (G-N) various hyperpriors; and (O-P) more iterations per chain.

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**eFigure 2**. Average concentration of included pollutants (NOx, EC, PM2.5, CO, O3) in 1 km x 1 km resolution for year 2000 (middle of study period 1989-2013).









