**etable 1.** Study Population Characteristics of Excluded Pregnancies (N=26,181).

| | Missing (n) | Excluded (%) P50 (P5-P95) | Included (%) P50 (P5-P95) | P[a] |
|---|---|---|---|---|
| Preeclampsia (all subtypes) | 2,303 | 2.7 | 2.6 | 0.57 |
| Mild preeclampsia | 2,500 | 1.8 | 1.9 | 0.39 |
| Severe preeclampsia | 524 | 0.8 | 0.7 | 0.10 |
| Early-onset preeclampsia | 2,303 | 1.1 | 0.9 | 0.004 |
| Late-onset preeclampsia | 2,303 | 1.5 | 1.7 | 0.12 |
| Gestational hypertension | 1,097 | 1.4 | 1.1 | <0.001 |
| Hypertensive disorders in pregnancy (all subtypes) | 2,847 | 3.9 | 3.3 | <0.001 |
| Parity | 10,758 | | | |
| Nulliparous | | 28.6 | 50.8 | |
| Multiparous | | 71.4 | 49.2 | <0.001 |
| Pre-pregnancy body mass index (BMI) | 12,202 | | | |
| <18.5 kg/m$^2$ | | 4.3 | 4.6 | |
| ≥18.5-25 kg/m$^2$ | | 63.2 | 68.6 | |
| ≥25-30 kg/m$^2$ | | 21.6 | 19.1 | |
| ≥30 kg/m$^2$ | | 10.2 | 7.7 | <0.001 |
| Disposable income | 1,449 | | | |
| Low | | 20.1 | 19.8 | |
| Middle | | 31.0 | 30.8 | |
| High | | 48.9 | 49.5 | 0.25 |
| Education | 1,948 | | | |
| Low | | 16.3 | 16.1 | |
| Middle | | 49.2 | 53.0 | |
| High | | 34.5 | 31.0 | <0.001 |
| Season of conception | 702 | | | |
| January-March | | 24.3 | 24.6 | |
| April-June | | 24.9 | 23.8 | |
| July-September | | 25.8 | 25.4 | |
| October-December | | 25.0 | 26.1 | <0.001 |
| Smoking in early pregnancy | 10,770 | | | |
| None | | 78.3 | 73.1 | |
| Occasional | | 21.8 | 26.9 | <0.001 |
| Physical activity in early pregnancy | 11,017 | | | |
| None | | 68.1 | 62.5 | |
| Some | | 31.9 | 37.5 | <0.001 |
| Age (years) | 25,479 | 29.8 (23.0-37.7) | 29.4 (22.8-37.0) | <0.001 |
| Height (cm) | 15,357 | 169 (160-179) | 169 (159-179) | 0.96 |
| NO$_2$ (μg/m$^3$)[a] | 25,639 | 11.1 (5.5-26.8) | 11.5 (5.8, 27.4) | <0.001 |
| Road traffic noise, L$_{den}$ [dB(A)][b] | 25,631 | 57.3 (49.3-69.7) | 57.5 (49.3, 69.8) | 0.008 |
| Railway noise, L$_{den}$ [dB(A)][b] | 3,682 | 51.1 (30.8-68.8) | 51.3 (31.1, 68.6) | 0.41 |
| Airport noise, L$_{den}$ [dB(A)][b] | 224 | 50.0 (45.0-55.0) | 50.0 (45.0, 60.0) | <0.001 |

[a] P-values from Chi- square or T-Test.
[b] Estimated for the 1st trimester.

**eTable 2.** Exposures Distribution During Each Trimester and the Full Pregnancy Periods.

|  | N | Mean | SD | P5 | P25 | P50 | P75 | P95 |
|---|---|---|---|---|---|---|---|---|
| $NO_2$ ($\mu g/m^3$) | | | | | | | | |
| 1st trimester | 72,745 | 13.3 | 7.3 | 5.8 | 8.7 | 11.5 | 15.4 | 27.7 |
| 2nd trimester | 72,745 | 13.1 | 7.0 | 6.0 | 8.8 | 11.3 | 14.7 | 27.2 |
| 3rd trimester | 72,745 | 12.7 | 6.9 | 5.5 | 8.4 | 11.0 | 14.4 | 26.4 |
| Pregnancy | 72,745 | 13.0 | 6.6 | 7.1 | 9.2 | 11.0 | 14.0 | 26.6 |
| $L_{den}$ (road, dB) | | | | | | | | |
| 1st trimester | 72,745 | 58.2 | 6.5 | 49.3 | 53.1 | 57.5 | 62.7 | 69.9 |
| 2nd trimester | 72,745 | 58.2 | 6.5 | 49.3 | 53.1 | 57.4 | 62.6 | 69.8 |
| 3rd trimester | 72,745 | 58.1 | 6.4 | 49.3 | 53.0 | 57.3 | 62.4 | 69.7 |
| Pregnancy | 72,745 | 58.3 | 6.4 | 49.5 | 53.3 | 57.6 | 62.7 | 69.8 |
| $L_{den}$ (railway, dB) | | | | | | | | |
| 1st trimester | 12,351 | 50.6 | 12.2 | 31.1 | 44.1 | 51.3 | 58.6 | 68.6 |
| 2nd trimester | 12,077 | 50.7 | 12.1 | 31.3 | 44.3 | 51.4 | 58.6 | 68.6 |
| 3rd trimester | 11,788 | 50.8 | 12.0 | 31.9 | 44.4 | 51.4 | 58.6 | 68.6 |
| $L_{den}$ (airport, dB) | | | | | | | | |
| 1st trimester | 760 | 50.2 | 4.7 | 45.0 | 45.0 | 50.0 | 55.0 | 60.0 |
| 2nd trimester | 776 | 50.3 | 4.7 | 45.0 | 45.0 | 50.0 | 55.0 | 60.0 |
| 3rd trimester | 801 | 50.3 | 4.7 | 45.0 | 45.0 | 50.0 | 55.0 | 60.0 |

**eTable 3.** Spearman Rank Correlation Between Exposures and Exposure Periods.

| | 1st trimester | | 2nd trimester | | 3rd trimester | | Full pregnancy | |
|---|---|---|---|---|---|---|---|---|
| | $NO_2$ | $L_{den}$ | $NO_2$ | $L_{den}$ | $NO_2$ | $L_{den}$ | $NO_2$ | $L_{den}$ |
| Air pollution ($NO_2$) | | | | | | | | |
| 1st trimester | . | 0.44 | 0.63 | 0.42 | 0.37 | 0.39 | 0.43 | 0.43 |
| 2nd trimester | 0.63 | 0.43 | . | 0.44 | 0.59 | 0.41 | 0.89 | 0.44 |
| 3rd trimester | 0.38 | 0.40 | 0.59 | 0.42 | . | 0.43 | 0.75 | 0.42 |
| Full pregnancy | 0.79 | 0.47 | 0.89 | 0.47 | 0.75 | 0.45 | . | 0.49 |
| Road traffic ($L_{den}$) | | | | | | | | |
| 1st trimester | . | . | . | . | . | . | 0.47 | . |
| 2nd trimester | . | 0.96 | . | . | . | . | 0.47 | . |
| 3rd trimester | . | 0.90 | . | 0.95 | . | . | 0.45 | . |
| Full pregnancy | . | 0.97 | . | 0.98 | . | 0.96 | 0.48 | . |

**eTable 4.** Air Pollution And Road Traffic Noise in Further Adjusted Associations With Hypertensive Disorders In Pregnancy (N=72,745).

| Outcome | $NO_2$ Single-exposure[a] OR | (95% CI) | Joint exposure[b] OR | (95% CI) | $L_{den}$ Single-exposure[a] OR | (95% CI) | Joint exposure[b] OR (95% CI) |
|---|---|---|---|---|---|---|---|
| Preeclampsia (all subtypes) | 1.07 | (1.01, 1.14) | 1.03 | (0.96, 1.12) | 1.10 | (1.03, 1.18) | 1.08 (0.99, 1.18) |
| Preeclampsia subtypes | | | | | | | |
|   Mild | 1.13 | (1.05, 1.21) | 1.09 | (1.00, 1.18) | 1.31 | (1.04, 1.23) | 1.07 (0.97, 1.18) |
|   Severe | 0.93 | (0.81, 1.06) | 0.88 | (0.75, 1.03) | 1.02 | (0.88, 1.17) | 1.01 (0.93, 1.30) |
| Preeclampsia onset | | | | | | | |
|   Early | 1.16 | (1.06, 1.28) | 1.10 | (0.98, 1.24) | 1.19 | (1.06, 1.34) | 1.11 (0.97, 1.28) |
|   Late | 1.02 | (0.94, 1.11) | 0.99 | (0.90, 1.09) | 1.05 | (0.96, 1.15) | 1.06 (0.95, 1.18) |
| Gestational hypertension | 1.03 | (0.93, 1.14) | 1.01 | (0.90, 1.14) | 1.05 | (0.94, 1.17) | 1.04 (0.91, 1.19) |
| Hypertensive disorders in pregnancy (all subtypes) | 1.07 | (1.01, 1.13) | 1.04 | (0.97, 1.11) | 1.09 | (1.02, 1.16) | 1.06 (0.98, 1.14) |

[a]Associations are presented as odds ratio (OR) with 95% confidence intervals (CI) for the indicated outcomes estimated from logistic regression models per increment of 10 μg/m$^3$ for $NO_2$ and 10 dB(A) for road traffic noise in mean exposure during 1$^{st}$ trimester of gestation. Adjusted for maternal age, parity, pre-pregnancy BMI, height, disposable income, education, season of conception, maternal smoking, physical activity, railway and airport noise.

[b]$NO_2$-models are further adjusted for $L_{den}$ while $L_{den}$-models are mutually adjusted for $NO_2$.

**eTable 5.** Ambient Air Pollution And Road Traffic Noise During Different Exposure-windows in Associations With Hypertensive Disorders In Pregnancy (N=72,745).

| Model | NO$_2$ OR[a] | (95% CI) | L$_{den}$ OR[a] | (95% CI) |
|---|---|---|---|---|
| **Preeclampsia (all subtypes)** | | | | |
| 1$^{st}$ trimester | 1.07 | (1.01, 1.14) | 1.10 | (1.02, 1.18) |
| 2$^{nd}$ trimester | 1.07 | (1.00, 1.14) | 1.09 | (1.01, 1.17) |
| 3$^{rd}$ trimester | 1.07 | (1.00, 1.14) | 1.07 | (0.99, 1.14) |
| Full pregnancy | 1.08 | (1.01, 1.15) | 1.08 | (1.01, 1.16) |
| **Mild preeclampsia** | | | | |
| 1$^{st}$ trimester | 1.12 | (1.05, 1.20) | 1.13 | (1.04, 1.22) |
| 2$^{nd}$ trimester | 1.12 | (1.04, 1.20) | 1.13 | (1.04, 1.23) |
| 3$^{rd}$ trimester | 1.13 | (1.05, 1.22) | 1.11 | (1.03, 1.21) |
| Full pregnancy | 1.14 | (1.06, 1.23) | 1.12 | (1.03, 1.22) |
| **Severe preeclampsia** | | | | |
| 1$^{st}$ trimester | 0.92 | (0.81, 1.05) | 1.01 | (0.88, 1.16) |
| 2$^{nd}$ trimester | 0.90 | (0.78, 1.04) | 0.96 | (0.84, 1.11) |
| 3$^{rd}$ trimester | 0.88 | (0.76, 1.02) | 0.93 | (0.80, 1.07) |
| Full pregnancy | 0.90 | (0.78, 1.04) | 0.97 | (0.84, 1.12) |
| **Early-onset preeclampsia** | | | | |
| 1$^{st}$ trimester | 1.16 | (1.05, 1.27) | 1.18 | (1.06, 1.33) |
| 2$^{nd}$ trimester | 1.16 | (1.05, 1.28) | 1.18 | (1.05, 1.32) |
| 3$^{rd}$ trimester | 1.19 | (1.08, 1.31) | 1.18 | (1.05, 1.33) |
| Full pregnancy | 1.19 | (1.07, 1.32) | 1.18 | (1.05, 1.33) |
| **Late-onset preeclampsia** | | | | |
| 1$^{st}$ trimester | 1.02 | (0.94, 1.10) | 1.05 | (0.96, 1.15) |
| 2$^{nd}$ trimester | 1.01 | (0.93, 1.10) | 1.04 | (0.95, 1.13) |
| 3$^{rd}$ trimester | 0.99 | (0.91, 1.08) | 1.00 | (0.92, 1.10) |
| Full pregnancy | 1.01 | (0.93, 1.10) | 1.03 | (0.94, 1.12) |
| **Gestational hypertension** | | | | |
| 1$^{st}$ trimester | 1.03 | (0.93, 1.14) | 1.05 | (0.96, 1.15) |
| 2$^{nd}$ trimester | 1.00 | (0.90, 1.11) | 1.01 | (0.91, 1.13) |
| 3$^{rd}$ trimester | 1.01 | (0.91, 1.13) | 1.00 | (0.89, 1.11) |
| Full pregnancy | 1.01 | (0.91, 1.13) | 1.02 | (0.91, 1.14) |
| **Hypertensive disorders in pregnancy (all subtypes)** | | | | |
| 1$^{st}$ trimester | 1.07 | (1.01, 1.13) | 1.08 | (1.02, 1.15) |
| 2$^{nd}$ trimester | 1.06 | (1.00, 1.12) | 1.07 | (1.00, 1.14) |
| 3$^{rd}$ trimester | 1.06 | (1.00, 1.12) | 1.05 | (0.98, 1.12) |
| Full pregnancy | 1.07 | (1.01, 1.14) | 1.06 | (1.00, 1.13) |

[a]Associations are presented as odds ratio (OR) with 95% confidence intervals (CI) for the indicated pregnancy outcomes from logistic regression models with adjustment for maternal age, parity, pre-pregnancy BMI, height, disposable income, education and season of conception per increment 10 μg/m$^3$ for NO$_2$ and 10 dB(A) for road traffic noise in mean exposure during the indicated periods.

**etable 6.** Exposure to Railway Noise And Hypertensive Disorders In Pregnancy (N=72,745).

| Outcome | n[d] | Unadjusted[a] | | Adjusted[b] | | Joint exposure[c] | |
|---|---|---|---|---|---|---|---|
| | | OR | (95% CI) | OR | (95% CI) | OR | (95% CI) |
| Preeclampsia (all subtypes) | 1,880 | 0.98 | (0.90, 1.08) | 0.97 | (0.95, 1.00) | 0.98 | (0.90, 1.08) |
| Preeclampsia subtypes | | | | | | | |
|    Mild | 1,393 | 1.00 | (0.89, 1.12) | 0.98 | (0.95, 1.00) | 1.00 | (0.90, 1.12) |
|    Severe | 487 | 0.93 | (0.78, 1.12) | 0.94 | (0.79, 1.13) | 0.94 | (0.79, 1.13) |
| Preeclampsia onset | | | | | | | |
|    Early | 671 | 0.92 | (0.79, 1.07) | 0.93 | (0.79, 1.08) | 0.93 | (0.79, 1.07) |
|    Late | 1,209 | 1.02 | (0.91, 1.15) | 1.03 | (0,91, 1.16) | 1.03 | (0.91, 1.15) |
| Gestational hypertension | 765 | 1.01 | (0.86, 1.18) | 1.01 | (0.87, 1.18) | 1.01 | (0.87, 1.18) |
| Hypertensive disorders in pregnancy (all subtypes) | 2,430 | 0.99 | (0.91, 1.08) | 1.00 | (0.92, 1.09) | 1.00 | (0.92, 1.08) |

[a]*Associations are presented as odds ratio (OR) with 95% confidence intervals (CI) for the indicated outcomes estimated from logistic regression models per increment of 10 dB(A) for railway traffic noise in mean exposure during 1st trimester of gestation.*

[b]*Adjusted for maternal age, parity, pre-pregnancy BMI, height, disposable income, education and season of conception.*

[c]*Further adjusted for road traffic noise $L_{den}$.*

[d]*Number of cases.*

**etable 7.** Sensitivity Analysis For Mild Preeclampsia.

| Analysis | $N^c$ | $n^d$ | NO$_2$ Single-exposure[a] OR (95% CI) | NO$_2$ Joint exposure[b] OR(95% CI) | Lden Single-exposure[a] OR(95% CI) | Lden Joint exposure[b] OR(95% CI) |
|---|---|---|---|---|---|---|
| As reported in Table 2 | 72,258 | 1,393 | 1.12 (1.05, 1.20) | 1.09 (1.00, 1.18) | 1.13 (1.04, 1.22) | 1.07 (0.97, 1.18) |
| Further adjusted for gestational diabetes mellitus | 72,258 | 1,393 | 1.12 (1.05, 1.20) | 1.09 (1.00, 1.18) | 1.13 (1.04, 1.22) | 1.07 (0.97, 1.18) |
| Excluding women with previous preeclampsia | 72,258 | 1,393 | 1.12 (1.05, 1.21) | 1.09 (1.00, 1.19) | 1.12 (1.04, 1.22) | 1.06 (0.96, 1.17) |
| Excluding women with unknown temperature | 72,258 | 1,393 | 1.14 (1.06, 1.22) | 1.09 (1.00, 1.19) | 1.12 (1.03, 1.22) | 1.06 (0.95, 1.17) |
| Further adjusted for temperature | 72,258 | 1,393 | 1.12 (1.05, 1.20) | 1.11 (1.02, 1.21) | 1.12 (1.03, 1.22) | 1.05 (0.94, 1.16) |
| Including women with pre-existing hypertension | 72,437 | 1,407 | 1.12 (1.05, 1.20) | 1.08 (0.99, 1.18) | 1.13 (1.04, 1.23) | 1.07 (0.97, 1.19) |

[a]Associations are presented as odds ratio (OR) with 95% confidence intervals (CI) for the indicated pregnancy outcomes estimated from logistic regression models per increment of 10 μg/m$^3$ for NO$_2$ and 10 dB(A) for road traffic noise in mean exposure during 1$^{st}$ trimester of gestation adjusted for maternal age, parity, pre-pregnancy BMI, height, disposable income, education and season of conception.

[b]NO$_2$-models are further adjusted for L$_{den}$ while L$_{den}$-models are mutually adjusted for NO$_2$.
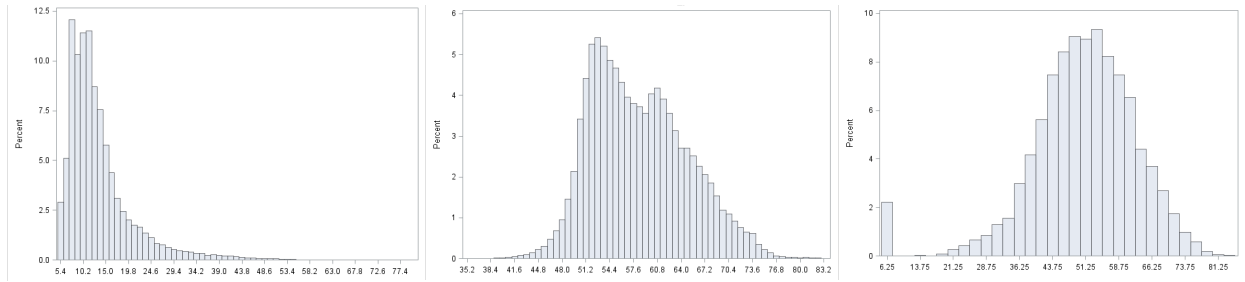
[c]Total number in the model.

[d]Number of cases.

Efigure 1. The distribution of $NO_2$ (left, μg/m$^3$), $L_{den}$ (middle, dB) and railway noise (right, dB) during the 1$^{st}$ trimester.