

# Supplementary Materials: Estimation of Saliva Cotinine Cut-Off Points for Active and Passive Smoking during Pregnancy—Polish Mother and Child Cohort (REPRO\_PL)

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**Table S1.** Active smoking during pregnancy (1st, 2nd and 3rd trimester) according to maternal characteristics.

| Characteristics <i>n</i> (%)      | 1st Trimester |                             |                              | 2nd Trimester |                             |                             | 3rd Trimester |                             |                             |
|-----------------------------------|---------------|-----------------------------|------------------------------|---------------|-----------------------------|-----------------------------|---------------|-----------------------------|-----------------------------|
|                                   | Missing       | Non-Smokers<br><i>n</i> (%) | Smokers<br><i>n</i> (%)      | Missing       | Non-Smokers<br><i>n</i> (%) | Smokers<br><i>n</i> (%)     | Missing       | Non-Smokers<br><i>n</i> (%) | Smokers<br><i>n</i> (%)     |
| All women; <i>n</i> = 1771        | 70            | 1505 (88.5%)                | 196 (11.5%)                  | 273           | 1356 (90.5%)                | 142 (9.5%)                  | 376           | 1273 (91.3%)                | 122 (8.7%)                  |
| Maternal age (years) <sup>a</sup> |               |                             |                              |               |                             |                             |               |                             |                             |
| <30; <i>n</i> = 963 (57.0)        | 4             | 826 (86.1%)                 | 133 (13.9%) **               | 106           | 761 (88.8%)                 | 96 (11.2%) *                | 155           | 729 (90.2%)                 | 79 (9.8%)                   |
| ≥30; <i>n</i> = 725 (43.0)        | 5             | 659 (91.5%)                 | 61 (8.5%)                    | 100           | 580 (92.8%)                 | 45 (7.2%)                   | 153           | 530 (92.7%)                 | 42 (7.3%)                   |
| Parity <sup>a</sup>               |               |                             |                              |               |                             |                             |               |                             |                             |
| 0; <i>n</i> = 874 (51.1)          | 6             | 772 (88.9%)                 | 96 (11.1%)                   | 107           | 696 (90.7%)                 | 71 (9.3%)                   | 153           | 659 (91.4%)                 | 62 (8.6%)                   |
| ≥1; <i>n</i> = 836 (48.9)         | 3             | 733 (88.0%)                 | 100 (12.0%)                  | 105           | 660 (90.3%)                 | 71 (9.7%)                   | 162           | 614 (91.1%)                 | 60 (8.9%)                   |
| Marital status <sup>a</sup>       |               |                             |                              |               |                             |                             |               |                             |                             |
| Single; <i>n</i> = 384 (22.5)     | 1             | 293 (76.5%)                 | 90 (23.5%) **                | 53            | 256 (77.3%)                 | 75 (22.7%) **               | 72            | 244 (78.2%)                 | 68 (21.8%) **               |
| Married; <i>n</i> = 1322 (77.5)   | 5             | 1211 (92.0%)                | 106 (8.0%)                   | 156           | 1099 (94.3%)                | 67 (5.7%)                   | 240           | 1028 (95.0%)                | 54 (5.0%)                   |
| Maternal education <sup>a</sup>   |               |                             |                              |               |                             |                             |               |                             |                             |
| ≤9; <i>n</i> = 80 (4.7)           | 0             | 39 (48.8%)                  | 41 (51.3%) <sup>b</sup> ,**  | 9             | 34 (47.9%)                  | 37 (52.1%) <sup>b</sup> ,** | 14            | 32 (48.5%)                  | 34 (51.5%) <sup>b</sup> ,** |
| 10–12; <i>n</i> = 527 (30.9)      | 3             | 421 (80.3%)                 | 103 (19.7%) <sup>c</sup> ,** | 57            | 392 (83.4%)                 | 78 (16.6%) <sup>c</sup> ,** | 90            | 374 (85.6%)                 | 63 (14.4%) <sup>c</sup> ,** |
| >12; <i>n</i> = 1097 (64.4)       | 2             | 1044 (95.3%)                | 51 (4.7%) <sup>d</sup> ,**   | 142           | 928 (97.2%)                 | 27 (2.8%) <sup>d</sup> ,**  | 206           | 866 (97.2%)                 | 25 (2.8%) <sup>d</sup> ,**  |

<sup>a</sup> Missing maternal age data *n* = 83, missing parity data *n* = 61, missing marital status data *n* = 65, missing educational data *n* = 67; <sup>b</sup> ≤9 vs. 10–12;

<sup>c</sup> 10–12 vs. >12; <sup>d</sup> ≤9 vs. >12; \* *p* < 0.05; \*\* *p* < 0.001; the numbers might not sum up to the total sample size as some missing data were observed (described in the methods section of the manuscript).

**Table S2.** Passive smoking during pregnancy (1st trimester) according to maternal characteristics.

| Characteristics                   | Husband/Partner Smoking |                    |                               | ETS | Smoking Allowed at Home |                               |         |                    |                               |
|-----------------------------------|-------------------------|--------------------|-------------------------------|-----|-------------------------|-------------------------------|---------|--------------------|-------------------------------|
|                                   | Missing                 | No<br><i>n</i> (%) | Yes<br><i>n</i> (%)           |     | No<br><i>n</i> (%)      | Yes<br><i>n</i> (%)           | Missing | No<br><i>n</i> (%) | Yes<br><i>n</i> (%)           |
| All women ( <i>n</i> = 1771)      | 92                      | 1108 (66.0%)       | 571 (34.0%)                   | 71  | 912 (53.6%)             | 788 (46.4%)                   | 80      | 1308 (77.4%)       | 383 (22.6%)                   |
| Maternal age (years) <sup>a</sup> |                         |                    |                               |     |                         |                               |         |                    |                               |
| <30 ( <i>n</i> = 963)             | 18                      | 570 (60.3%)        | 375 (39.7%) **                | 5   | 453 (47.3%)             | 505 (52.7%) **                | 8       | 683 (71.5%)        | 272 (28.5%) **                |
| ≥30 ( <i>n</i> = 725)             | 13                      | 525 (73.7%)        | 187 (26.3%)                   | 5   | 445 (61.8%)             | 275 (38.2%)                   | 11      | 605 (84.7%)        | 109 (15.3%)                   |
| Parity <sup>a</sup>               |                         |                    |                               |     |                         |                               |         |                    |                               |
| 0 ( <i>n</i> = 874)               | 17                      | 561 (65.5%)        | 296 (34.5%)                   | 4   | 448 (51.5%)             | 422 (48.5%)                   | 11      | 641 (74.3%)        | 222 (25.7%) *                 |
| ≥1 ( <i>n</i> = 836)              | 14                      | 547 (66.5)         | 275 (33.5%)                   | 6   | 464 (55.9%)             | 366 (44.1)                    | 8       | 667 (80.6%)        | 161 (19.4%)                   |
| Marital status <sup>a</sup>       |                         |                    |                               |     |                         |                               |         |                    |                               |
| Single ( <i>n</i> = 384)          | 9                       | 178 (47.5%)        | 197 (52.5%) **                | 1   | 132 (34.5%)             | 251 (65.5%) **                | 4       | 218 (57.4%)        | 162 (42.6%) **                |
| Married ( <i>n</i> = 1322)        | 19                      | 929 (71.3%)        | 374 (28.7%)                   | 6   | 780 (59.3%)             | 536 (40.7%)                   | 11      | 1090 (83.1%)       | 221 (16.9%)                   |
| Maternal education <sup>a</sup>   |                         |                    |                               |     |                         |                               |         |                    |                               |
| ≤9 ( <i>n</i> = 80)               | 0                       | 25 (31.3%)         | 55 (68.8%) <sup>b</sup> , **  | 1   | 14 (17.7%)              | 65 (82.3%) <sup>b</sup> , **  | 0       | 20 (25.0%)         | 60 (75.0%) <sup>b</sup> , **  |
| 10–12 ( <i>n</i> = 527)           | 7                       | 264 (50.8%)        | 256 (49.2%) <sup>c</sup> , ** | 2   | 199 (37.9%)             | 326 (62.1%) <sup>c</sup> , ** | 6       | 328 (63.0%)        | 193 (37.0%) <sup>c</sup> , ** |
| >12 ( <i>n</i> = 1097)            | 20                      | 818 (76.0%)        | 259 (24.0%) <sup>d</sup> , ** | 3   | 698 (63.8%)             | 396 (36.2%) <sup>d</sup> , ** | 10      | 959 (88.2%)        | 128 (11.8%) <sup>d</sup> , ** |

<sup>a</sup> Missing maternal age data *n* = 83, missing parity data *n* = 61, missing marital status data *n* = 65, missing educational data *n* = 67; <sup>b</sup> ≤9 vs. 10–12;

<sup>c</sup> 10–12 vs. >12; <sup>d</sup> ≤9 vs. >12; \* *p* < 0.05; \*\* *p* < 0.001; the numbers might not sum up to the total sample size as some missing data were observed (described in the methods section of the manuscript); ETS: environmental tobacco smoke.

**Table S3.** Passive smoking during pregnancy (2nd trimester) according to maternal characteristics.

| Characteristics                   | Husband/Partner Smoking |                    |                             | ETS     |                    | Smoking Allowed at Home     |         |                    |                             |
|-----------------------------------|-------------------------|--------------------|-----------------------------|---------|--------------------|-----------------------------|---------|--------------------|-----------------------------|
|                                   | Missing                 | No<br><i>n</i> (%) | Yes<br><i>n</i> (%)         | Missing | No<br><i>n</i> (%) | Yes<br><i>n</i> (%)         | Missing | No<br><i>n</i> (%) | Yes<br><i>n</i> (%)         |
| All women ( <i>n</i> = 1771)      | 290                     | 1033 (69.8%)       | 448 (30.2%)                 | 290     | 1139 (76.9%)       | 342 (23.1%)                 | 287     | 1193 (80.4%)       | 291 (19.6%)                 |
| Maternal age (years) <sup>a</sup> |                         |                    |                             |         |                    |                             |         |                    |                             |
| <30 ( <i>n</i> = 963)             | 114                     | 552 (65.0%)        | 297 (35.0%) **              | 114     | 603 (71.0%)        | 246 (29.0%) *               | 110     | 644 (75.5%)        | 209 (24.5%) *               |
| ≥30 ( <i>n</i> = 725)             | 109                     | 470 (76.3%)        | 146 (23.7%)                 | 109     | 522 (84.7%)        | 94 (15.3%)                  | 109     | 534 (86.7%)        | 82 (13.3%)                  |
| Parity <sup>a</sup>               |                         |                    |                             |         |                    |                             |         |                    |                             |
| 0 ( <i>n</i> = 874)               | 114                     | 523 (68.8%)        | 237 (31.2%)                 | 115     | 568 (74.8%)        | 191 (25.2%)                 | 111     | 588 (77.1%)        | 175 (22.9%) *               |
| ≥1 ( <i>n</i> = 836)              | 115                     | 510 (70.7%)        | 211 (29.3%)                 | 114     | 571 (79.1%)        | 151 (20.9%)                 | 115     | 605 (83.9%)        | 116 (16.1%)                 |
| Marital status <sup>a</sup>       |                         |                    |                             |         |                    |                             |         |                    |                             |
| Single ( <i>n</i> = 384)          | 57                      | 176 (53.8%)        | 151 (46.2%) *               | 56      | 177 (54.0%)        | 151 (46.0%) *               | 55      | 201 (61.1%)        | 128 (38.9%) *               |
| Married ( <i>n</i> = 1322)        | 169                     | 856 (74.2%)        | 297 (25.8%)                 | 170     | 961 (83.4%)        | 191 (16.6%)                 | 168     | 991 (85.9%)        | 163 (14.1%)                 |
| Maternal education <sup>a</sup>   |                         |                    |                             |         |                    |                             |         |                    |                             |
| ≤9 ( <i>n</i> = 80)               | 8                       | 24 (33.3%)         | 48 (66.7%) <sup>b, *</sup>  | 8       | 22 (30.6%)         | 50 (69.4%) <sup>b, *</sup>  | 8       | 30 (41.7%)         | 42 (58.3%) <sup>b, *</sup>  |
| 10–12 ( <i>n</i> = 527)           | 62                      | 270 (58.1%)        | 195 (41.9%) <sup>c, *</sup> | 62      | 294 (63.2%)        | 171 (36.8%) <sup>c, *</sup> | 62      | 305 (65.6%)        | 160 (34.4%) <sup>c, *</sup> |
| >12 ( <i>n</i> = 1097)            | 154                     | 739 (78.4%)        | 204 (21.6%) <sup>d, *</sup> | 154     | 822 (87.2%)        | 121 (12.8%)                 | 151     | 857 (90.6%)        | 89 (9.4%) <sup>d, *</sup>   |

<sup>a</sup> Missing maternal age data *n* = 83, missing parity data *n* = 61, missing marital status data *n* = 65, missing educational data *n* = 67, <sup>b</sup> ≤9 vs. 10–12; <sup>c</sup> 10–12 vs. >12; <sup>d</sup> ≤9 vs. >12;

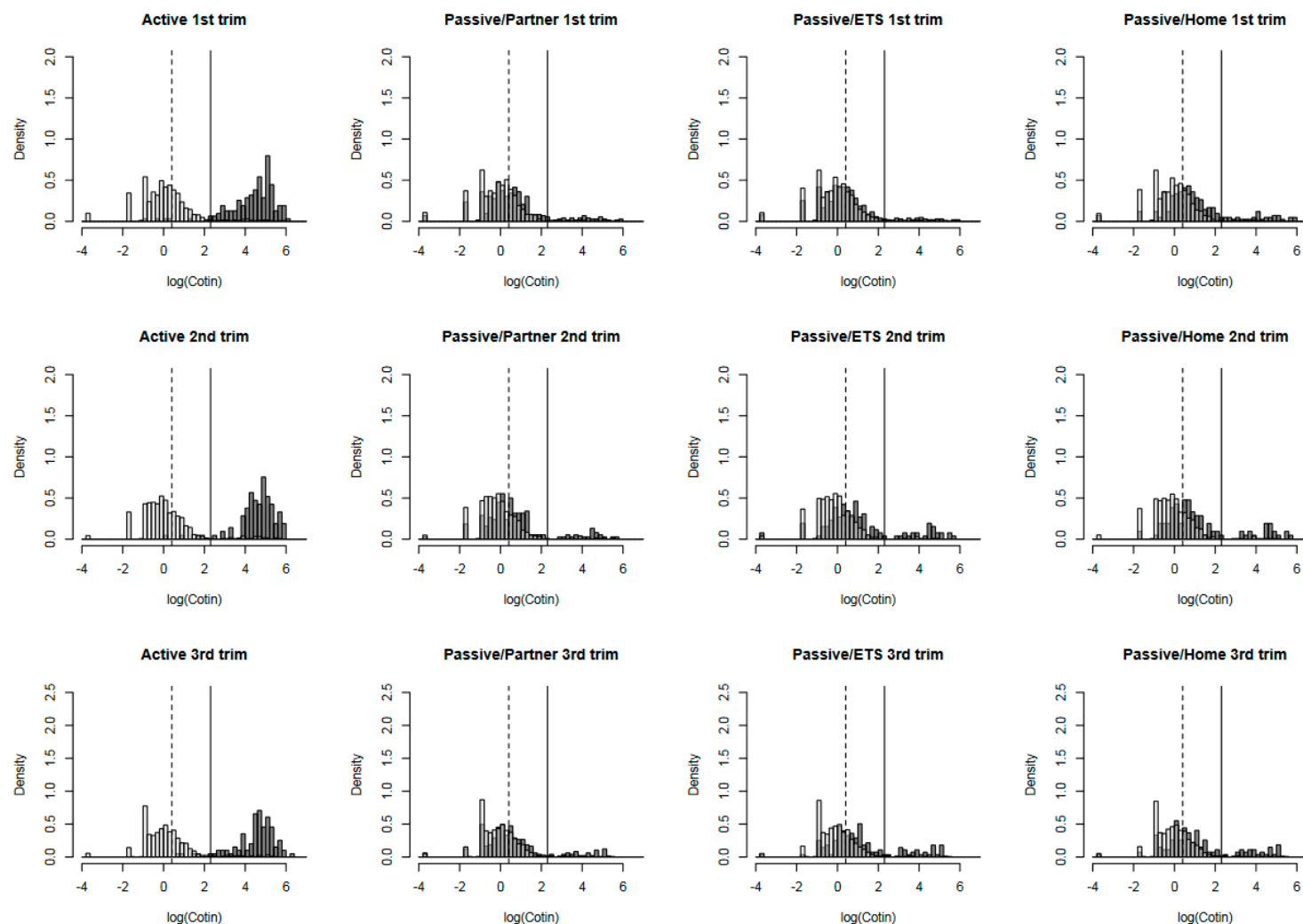
\* *p* < 0.001; the numbers might not sum up to the total sample size as some missing data were observed (described in the methods section of the manuscript).

**Table S4.** Passive smoking during pregnancy (3rd trimester) according to maternal characteristics.

| Characteristics                   | Husband/Partner Smoking |                    |                               | ETS | Smoking Allowed at Home |                               |                     |              |   |
|-----------------------------------|-------------------------|--------------------|-------------------------------|-----|-------------------------|-------------------------------|---------------------|--------------|---|
|                                   | Missing                 | No<br><i>n</i> (%) | Yes<br><i>n</i> (%)           |     | Missing                 | No<br><i>n</i> (%)            | Yes<br><i>n</i> (%) | Missing      | No<br><i>n</i> (%)<br>Yes<br><i>n</i> (%) |
| All women ( <i>n</i> = 1771)      | 396                     | 959 (69.7%)        | 416 (30.3%)                   | 398 | 1080 (78.7%)            | 293 (21.3%)                   | 397                 | 1105 (80.4%) | 269 (19.6%)                               |
| Maternal age (years) <sup>a</sup> |                         |                    |                               |     |                         |                               |                     |              |   |
| <30 ( <i>n</i> = 963)             | 165                     | 523 (65.5%)        | 275 (34.5%) **                | 166 | 585 (73.4%)             | 212 (26.6%) **                | 165                 | 606 (75.9%)  | 192 (24.1%) *                             |
| ≥30 ( <i>n</i> = 725)             | 163                     | 426 (75.8%)        | 136 (24.2%)                   | 164 | 484 (86.3%)             | 77 (13.7%)                    | 164                 | 486 (86.6%)  | 75 (13.4%)                                |
| Parity <sup>a</sup>               |                         |                    |                               |     |                         |                               |                     |              |   |
| 0 ( <i>n</i> = 874)               | 166                     | 491 (69.4%)        | 217 (30.6%)                   | 166 | 534 (75.4%)             | 174 (24.6%) *                 | 165                 | 547 (77.2%)  | 162 (22.8%) *                             |
| ≥1 ( <i>n</i> = 836)              | 169                     | 468 (70.2%)        | 199 (29.8%)                   | 171 | 546 (82.1%)             | 119 (17.9%)                   | 171                 | 558 (83.9%)  | 107 (16.1%)                               |
| Marital status <sup>a</sup>       |                         |                    |                               |     |                         |                               |                     |              |   |
| Single ( <i>n</i> = 384)          | 77                      | 164 (53.4%)        | 143 (46.6%) **                | 75  | 172 (55.7%)             | 137 (44.3%) **                | 76                  | 181 (58.8%)  | 127 (41.2%) **                            |
| Married ( <i>n</i> = 1322)        | 255                     | 794 (74.4%)        | 273 (25.6%)                   | 259 | 907 (85.3%)             | 156 (14.7%)                   | 257                 | 923 (86.7%)  | 142 (13.3%)                               |
| Maternal education <sup>a</sup>   |                         |                    |                               |     |                         |                               |                     |              |   |
| ≤9 ( <i>n</i> = 80)               | 14                      | 21 (31.8%)         | 45 (68.2%) <sup>b</sup> , **  | 14  | 20 (30.3%)              | 46 (69.7%) <sup>b</sup> , **  | 14                  | 21 (31.8%)   | 45 (68.2%) <sup>b</sup> , **              |
| 10–12 ( <i>n</i> = 527)           | 97                      | 244 (56.7%)        | 186 (43.3%) <sup>c</sup> , ** | 95  | 286 (66.2%)             | 146 (33.8%) <sup>c</sup> , ** | 97                  | 290 (67.4%)  | 140 (32.6%) <sup>c</sup> , **             |
| >12 ( <i>n</i> = 1097)            | 219                     | 694 (79.0%)        | 184 (21.0%) <sup>d</sup> , ** | 223 | 773 (88.4%)             | 101 (11.6%) <sup>d</sup> , ** | 220                 | 793 (90.4%)  | 84 (9.6%) <sup>d</sup> , **               |

<sup>a</sup> Missing maternal age data *n* = 83; missing parity data *n* = 61; missing marital status data *n* = 65; missing educational data *n* = 67; <sup>b</sup> ≤9 vs. 10–12; <sup>c</sup> 10–12 vs. >12; <sup>d</sup> ≤9 vs. >12;

\* *p* < 0.05; \*\* *p* < 0.001; the numbers might not sum up to the total sample size as some missing data were observed (described in the methods section of the manuscript).



**Figure S1.** Histograms of log (cotinine) in each trimester of pregnancy and self-reported active and passive smoking status. Non-exposed—light gray; Exposed—dark gray; Overlapping parts of histograms—moderate gray; Vertical lines indicate cut-off points for cotinine levels: the continuous vertical line corresponds to 10 ng/mL as the cut-off point for active smoking, the dotted vertical line corresponds to 1.5 ng/mL as the cut-off point for passive smoking. ETS: environmental tobacco smoke.