

## Supplementary Online Content

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**eTable 1.** The Baseline Comparison Between Included and Excluded Participants

**eTable 2.** Multivariable Logistic Regression of Odds of Fertility Treatment and Preterm Birth: Full Regression Results

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

**eTable 1.** The Baseline Comparison Between Included and Excluded Participants

|                                 | All               | Excluded       | Included          | P      |
|---------------------------------|-------------------|----------------|-------------------|--------|
| Number, n (%)                   | 15379982 (100.00) | 1009062 (6.56) | 14370920 (93.44)  | /      |
| Birth year, n (%)               |                   |                |                   | <0.001 |
| 2016                            | 3704404 (25.78)   | 251708 (24.94) | 3,704,404 (25.78) |        |
| 2017                            | 3612116 (25.13)   | 252638 (25.04) | 3,612,116 (25.13) |        |
| 2018                            | 3549151 (24.70)   | 252383 (25.01) | 3,549,151 (24.70) |        |
| 2019                            | 3505249 (24.39)   | 252333 (25.01) | 3,505,249 (24.39) |        |
| Age (y), mean (SD)              | 28.92 (5.82)      | 30.67 (5.88)   | 28.79 (5.79)      | <0.001 |
| Age group (y), n (%)            |                   |                |                   | <0.001 |
| <30                             | 8231948 (53.52)   | 422179 (41.84) | 7809769 (54.34)   |        |
| 30-35                           | 4395132 (28.58)   | 315080 (31.23) | 4080052 (28.39)   |        |
| 35-39                           | 2247936 (14.62)   | 208821 (20.69) | 2039115 (14.19)   |        |
| ≥40                             | 504966 (3.28)     | 62982 (6.24)   | 441984 (3.08)     |        |
| Race/ethnicity, n (%)           |                   |                |                   | <0.001 |
| Hispanic                        | 3620257 (23.54)   | 186393 (18.47) | 3433864 (23.89)   |        |
| non-Hispanic white              | 7924918 (51.53)   | 512786 (50.82) | 7412132 (51.58)   |        |
| non-Hispanic black              | 2221881 (14.45)   | 209318 (20.74) | 2012563 (14.00)   |        |
| Other*                          | 1473639 (9.58)    | 86100 (8.53)   | 1387539 (9.66)    |        |
| missing                         | 139287 (0.91)     | 14465 (1.43)   | 124822 (0.87)     |        |
| Education level, n (%)          |                   |                |                   | <0.001 |
| lower than high school          | 1978254 (12.86)   | 112894 (11.19) | 1865360 (12.98)   |        |
| high school                     | 3891505 (25.30)   | 243168 (24.10) | 3648337 (25.39)   |        |
| higher than high school         | 9304987 (60.50)   | 632090 (62.64) | 8672897 (60.35)   |        |
| missing                         | 205236 (1.33)     | 20910 (2.07)   | 184326 (1.28)     |        |
| Marital status, n(%)            |                   |                |                   | <0.001 |
| married                         | 8398429 (54.61)   | 564963 (55.99) | 7833466 (54.51)   |        |
| unmarried                       | 5604997 (36.44)   | 365103 (36.18) | 5239894 (36.46)   |        |
| missing                         | 1376556 (8.95)    | 78996 (7.83)   | 1297560 (9.03)    |        |
| Parity, n (%)                   |                   |                |                   | <0.001 |
| 0                               | 5838507 (37.96)   | 298786 (29.61) | 5539721 (38.55)   |        |
| 1                               | 4905329 (31.89)   | 314709 (31.19) | 4590620 (31.94)   |        |
| 2                               | 2629398 (17.10)   | 199665 (19.79) | 2429733 (16.91)   |        |
| 3                               | 1142425 (7.43)    | 101932 (10.10) | 1040493 (7.24)    |        |
| ≥4                              | 819082 (5.33)     | 85934 (8.52)   | 733148 (5.10)     |        |
| missing                         | 45241 (0.29)      | 8036 (0.80)    | 37205 (0.26)      |        |
| Smoking before pregnancy, n (%) |                   |                |                   | <0.001 |
| Yes                             | 1319997 (8.58)    | 96599 (9.57)   | 1223398 (8.51)    |        |
| No                              | 13983845 (90.92)  | 903240 (89.51) | 13080605 (91.02)  |        |
| missing                         | 76140 (0.50)      | 9223 (0.91)    | 66917 (0.47)      |        |
| Smoking during pregnancy, n (%) |                   |                |                   | <0.001 |
| Yes                             | 1015269 (6.60)    | 75059 (7.44)   | 940210 (6.54)     |        |

|                                                  |                  |                |                  |        |
|--------------------------------------------------|------------------|----------------|------------------|--------|
| No                                               | 14254360 (92.68) | 907234 (89.91) | 13347126 (92.88) |        |
| missing                                          | 110353 (0.72)    | 26769 (2.65)   | 83584 (0.58)     |        |
| Time of initiation of prenatal care, n (%)       |                  |                |                  | <0.001 |
| no prenatal care                                 | 262151 (1.70)    | 25024 (2.48)   | 237127 (1.65)    |        |
| 1st-3rd month                                    | 11585600 (75.33) | 763197 (75.63) | 10822403 (75.31) |        |
| 4th-6th month                                    | 2455920 (15.97)  | 148245 (14.69) | 2307675 (16.06)  |        |
| 7th-final month                                  | 683316 (4.44)    | 32240 (3.20)   | 651076 (4.53)    |        |
| missing                                          | 392995 (2.56)    | 40356 (4.00)   | 352639 (2.45)    |        |
| Prepregnancy BMI (kg/m <sup>2</sup> ), mean (SD) | 28.86 (13.11)    | 32.56 (15.40)  | 28.60 (12.89)    |        |
| Prepregnancy BMI (kg/m <sup>2</sup> ), n (%)     |                  |                |                  | <0.001 |
| <18.5                                            | 492166 (3.20)    | 18272 (1.81)   | 473894 (3.30)    |        |
| 18.5-24.9                                        | 6411728 (41.69)  | 295324 (29.27) | 6116404 (42.56)  |        |
| 25.0-29.9                                        | 3967727 (25.80)  | 239199 (23.71) | 3728528 (25.94)  |        |
| 30.0-34.9                                        | 2238474 (14.55)  | 180249 (17.86) | 2058225 (14.32)  |        |
| 35.0-39.9                                        | 1102005 (7.17)   | 117110 (11.61) | 984895 (6.85)    |        |
| ≥40                                              | 788339 (5.13)    | 122114 (12.10) | 666225 (4.64)    |        |
| missing                                          | 379543 (2.47)    | 36794 (3.65)   | 342749 (2.39)    |        |
| Gestational hypertention, n (%)                  |                  |                |                  | <0.001 |
| Yes                                              | 1048800 (6.82)   | 95531 (9.47)   | 953269 (6.63)    |        |
| No                                               | 14317119 (93.09) | 899468 (89.14) | 13417651 (93.37) |        |
| missing                                          | 14063 (0.09)     | 14063 (1.39)   | /                |        |
| Gestational diabetes, n (%)                      |                  |                |                  | <0.001 |
| Yes                                              | 992141 (6.45)    | 92736 (9.19)   | 899405 (6.26)    |        |
| No                                               | 14373778 (93.46) | 902263 (89.42) | 13471515 (93.74) |        |
| missing                                          | 14063 (0.09)     | 14063 (1.39)   | /                |        |
| Eclampsia, n (%)                                 |                  |                |                  | <0.001 |
| Yes                                              | 41083 (0.27)     | 7227 (0.72)    | 33856 (0.24)     |        |
| No                                               | 15324836 (99.64) | 987772 (97.89) | 14337064 (99.76) |        |
| missing                                          | 14063 (0.09)     | 14063 (1.39)   | /                |        |
| Previous history of preterm birth, n (%)         |                  |                |                  | <0.001 |
| Yes                                              | 519597 (3.38)    | 66451 (6.59)   | 453146 (3.15)    |        |
| No                                               | 14846322 (96.53) | 928548 (92.02) | 13917774 (96.85) |        |
| missing                                          | 14063 (0.09)     | 14063 (1.39)   |                  |        |
| Previous history of Cesarean, n (%)              |                  |                |                  | <0.001 |
| Yes                                              | 2383398 (15.50)  | 201123 (19.93) | 2182275 (15.19)  |        |
| No                                               | 12982521 (84.41) | 793876 (78.67) | 12188645 (84.81) |        |
| missing                                          | 14063 (0.09)     | 14063 (1.39)   | /                |        |
| Birth weight (g), n (%)                          |                  |                |                  | <0.001 |
| <1000                                            | 99934 (0.65)     | 48111 (4.77)   | 51823 (0.36)     |        |
| 1000-1500                                        | 113547 (0.74)    | 41669 (4.13)   | 71878 (0.50)     |        |
| 1500-2499                                        | 1054649 (6.86)   | 299462 (29.68) | 755187 (5.25)    |        |
| ≥2500                                            | 14097549 (91.66) | 611565 (60.61) | 13485984 (93.84) |        |

|                                 |                  |                |                  |        |
|---------------------------------|------------------|----------------|------------------|--------|
| missing                         | 14303 (0.09)     | 8255 (0.82)    | 6048 (0.04)      |        |
| Infant sex, n (%)               |                  |                |                  | 0.003  |
| Male                            | 7867059 (51.15)  | 514695 (51.01) | 7352364 (51.16)  |        |
| Female                          | 7512923 (48.85)  | 494367 (48.99) | 7018556 (48.84)  |        |
| Preterm birth, n(%)             |                  |                |                  | <0.001 |
| No                              | 13832046 (89.94) | 552954 (54.80) | 13279092 (92.40) |        |
| Yes                             | 1536487 (9.99)   | 444659 (44.07) | 1091828 (7.60)   |        |
| extremely preterm birth         | 102390 (0.67)    | 50149 (4.97)   | 52241 (0.36)     |        |
| very preterm birth              | 141063 (0.92)    | 50190 (4.97)   | 90873 (0.63)     |        |
| moderate and late preterm birth | 1293034 (8.41)   | 344320 (34.12) | 948714 (6.60)    |        |
| missing                         | 11449 (0.07)     | 11449 (1.13)   | /                |        |
| Fertility treatment, n(%)       |                  |                |                  | <0.001 |
| Natural conception              | 15074516 (98.01) | 897716 (88.97) | 14176800 (98.65) |        |
| ART treatment                   | 176219 (1.15)    | 53275 (5.28)   | 122944 (0.86)    |        |
| Non-ART treatment               | 96667 (0.63)     | 25491 (2.53)   | 71176 (0.50)     |        |
| missing                         | 32580 (0.21)     | 32580 (3.23)   | /                |        |

\*Included non-Hispanic Native American or Alaskans, non-Hispanic Asians, non-Hispanic Native Hawaiians or other Pacific Islanders, non-Hispanic people of more than one race, people of unknown racial or ethnic origin, or not stated.

**eTable 2.** Multivariable Logistic Regression of Odds of Fertility Treatment and Preterm Birth: Full Regression Results

|                                   | aOR (95%CI)            |
|-----------------------------------|------------------------|
| Fertility treatment               |                        |
| natural conception group          | reference              |
| ART group                         | 1.49 (1.46, 1.52)      |
| non-ART group                     | 1.35 (1.31, 1.38)      |
| mother age (y)                    | 1.0126(1.0122, 1.0133) |
| Race/ethnicity                    |                        |
| Hispanic                          | reference              |
| non-Hispanic white                | 0.871 (0.867, 0.876)   |
| non-Hispanic black                | 1.25 (1.24, 1.26)      |
| Other*                            | 0.985 (0.977, 0.993)   |
| missing                           | 0.93 (0.90, 0.95)      |
| Education level                   |                        |
| lower than high school            | reference              |
| high school                       | 0.952 (0.946, 0.958)   |
| higher than high school           | 0.835 (0.829, 0.840)   |
| missing                           | 0.98 (0.96, 1.00)      |
| Marital status                    |                        |
| married                           | reference              |
| unmarried                         | 1.22 (1.21, 1.23)      |
| missing                           | 1.03 (1.02, 1.04)      |
| Parity, (n)                       |                        |
| 0                                 | reference              |
| 1                                 | 0.766 (0.762, 0.770)   |
| 2                                 | 0.800 (0.795, 0.806)   |
| 3                                 | 0.877 (0.870, 0.884)   |
| ≥4                                | 0.938 (0.929, 0.946)   |
| missing                           | 0.828 (0.799, 0.858)   |
| Smoking before pregnancy          |                        |
| No                                | reference              |
| Yes                               | 0.92 (0.91, 0.93)      |
| missing                           | 0.022 (0.021, 0.023)   |
| Smoking during pregnancy          |                        |
| No                                | reference              |
| Yes                               | 1.50 (1.57, 1.61)      |
| missing                           | 62.06 (59.71, 64.50)   |
| Time of iniation of prenatal care |                        |
| no prenatal care                  | reference              |
| 1st-3rd month                     | 0.330 (0.326, 0.333)   |
| 4th-6th month                     | 0.291 (0.2880, 0.295)  |

|                                   |                         |
|-----------------------------------|-------------------------|
| 7th-final month                   | 0.248 (0.245, 0.252)    |
| missing                           | 0.598 (0.590, 0.607)    |
| Prepregnancy BMI (kg/m2),         | 1.0019 (1.0018, 1.0021) |
| Gestational hypertention          |                         |
| No                                | reference               |
| Yes                               | 2.96 (2.94, 2.98)       |
| Gestational diabetes              |                         |
| No                                | reference               |
| Yes                               | 1.34 (1.33, 1.35)       |
| Eclampsia                         |                         |
| No                                | reference               |
| Yes                               | 5.41 (5.28, 5.54)       |
| Previous history of preterm birth |                         |
| No                                | reference               |
| Yes                               | 4.09 (4.06, 4.12)       |
| Previous history of Cesarean      |                         |
| No                                | reference               |
| Yes                               | 1.21 (1.20, 1.22)       |

\*Included non-Hispanic Native American or Alaskans, non-Hispanic Asians, non-Hispanic Native Hawaiians or other Pacific Islanders, non-Hispanic people of more than one race, people of unknown racial or ethnic origin, or not stated.