Supplementary Online Content

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This supplementary material has been provided by the authors to give readers additional information about their work.
| Characteristics                                                                 | Entire cohort N=670097 | Complete data N=642158a | Missing data N=27939b | P       |
|---------------------------------------------------------------------------------|------------------------|-------------------------|------------------------|---------|
| Children:                                                                       |                        |                         |                        |         |
| Maternal antenatal corticosteroid treatment, no. %                              |                        |                         |                        |         |
| Treatment-exposed                                                               | 14229 (2.2)            | 639 (2.3)               | .43                    |         |
| Nonexposed                                                                      | 627929 (97.8)          | 27300 (97.7)            |                        |         |
| Sex, no. (%)                                                                    |                        |                         |                        |         |
| Boy                                                                             | 328391 (51.1)          | 14171 (50.7)            | .17                    |         |
| Girl                                                                            | 313767 (48.9)          | 13768 (49.3)            |                        |         |
| Gestational age at birth, mean (SD), weeks                                      | 39.8 (1.6)             | 39.6 (2.0)              | <.001                  |         |
| Birth weight, mean (SD), g                                                      | 3530 (525)             | 3496 (567)              | <.001                  |         |
| Apgar score (maximum of 1 and 5 minutes)b                                        |                        |                         |                        |         |
| 0-3                                                                             | 9683 (1.5)             | 477 (1.7)               | .004                   |         |
| 4-6                                                                             | 27292 (4.3)            | 1117 (4.0)              |                        |         |
| 7-10                                                                            | 605183 (94.2)          | 26345 (94.3)            |                        |         |
| Admission to neonatal intensive care unit, no. (%)                              |                        |                         |                        |         |
| No                                                                              | 576991 (89.9)          | 24732 (88.5)            | <.001                  |         |
| Yes                                                                             | 65167 (10.1)           | 3207 (11.5)             |                        |         |
| Major congenital anomaly, no. (%)                                               |                        |                         |                        |         |
| No                                                                              | 612314 (95.4)          | 26549 (95.0)            | <.001                  |         |
| Yes                                                                             | 29844 (4.6)            | 1390 (5.0)              |                        |         |
| Mothers:                                                                        |                        |                         |                        |         |
| Age at delivery, mean (SD), years                                               | 30.3 (5.3)             | 30.2 (5.6)              | .06                    |         |
| Parity, no. (%)                                                                 |                        |                         |                        |         |
| 0                                                                               | 268681 (41.8)          | 9958 (35.6)             | <.001                  |         |
| 1                                                                               | 217305 (33.8)          | 9759 (34.9)             |                        |         |
| 2                                                                               | 93427 (14.5)           | 4643 (16.6)             |                        |         |
| 3                                                                               | 32095 (5.0)            | 1779 (6.4)              |                        |         |
| ≥4                                                                              | 30650 (4.8)            | 1800 (6.4)              |                        |         |
| Delivery mode, no. (%)                                                          |                        |                         |                        |         |
| Vaginal                                                                         | 540682 (84.2)          | 23123 (82.8)            | <.001                  |         |
| Caesarean                                                                        | 101476 (15.8)          | 4816 (17.2)             |                        |         |
| Pre-pregnancy body mass index, mean (SD), kg/m²                                   | 24.4 (4.9)             | 24.7 (5.1)              | <.001                  |         |
| Premature rupture of membranes, no. (%)                                         |                        |                         |                        |         |
| No                                                                              | 622971 (97.0)          | 27315 (97.8)            | <.001                  |         |
| Yes                                                                             | 19187 (3.0)            | 624 (2.2)               |                        |         |

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| Hypertension, no. (%)<sup>c</sup> | No      | 568889 (88.6) | 24988 (89.4) | <.001 |
|----------------------------------|---------|---------------|--------------|-------|
|                                  | Yes     | 73269 (11.4)  | 2951 (10.6)  |       |
| Any mental or behavioral disorder, no. (%)<sup>c</sup> | No      | 615609 (95.9) | 26756 (95.8) | .41   |
|                                  | Yes     | 26549 (4.1)   | 1183 (4.2)   |       |
| Any eye, adnexa, ear or mastoid disorder, no. (%)<sup>c</sup> | No      | 523307 (81.5) | 22128 (79.2) | <.001 |
|                                  | Yes     | 118851 (18.5) | 5811 (20.8)  |       |
| Any nervous system disorder, no. (%)<sup>c</sup> | No      | 598360 (93.2) | 25906 (92.7) | .003  |
|                                  | Yes     | 43798 (6.8)   | 2033 (7.3)   |       |
| Smoking during pregnancy, no. (%)<sup>c</sup> | No      | 607857 (94.7) | 26297 (94.1) | <.001 |
|                                  | Yes     | 34301 (5.3)   | 1642 (5.9)   |       |

<sup>a</sup>Percentages may not total up to 100% due to rounding.

<sup>b</sup>The Apgar score is calculated at 1 and 5 minutes after birth, uses skin color, pulse rate, reflexes, muscle tone, and respiratory effort to determine medical attention: Scores 0-3 suggest a need for resuscitation, while scores of 7 or more are considered normal.

<sup>c</sup>International Statistical Classification of Diseases and Related Health problems, tenth revision codes: Premature rupture of membranes, O42; Gestational diabetes, O24; Hypertension, O10, O13-O15; Any mental or behavioral disorder, F00-F99; Any eye, adnexa, ear, or mastoid disorder, H00-H95; Any nervous system disorder, G00-G99.
| Outcome | Entire cohort N=670097 | Term N=641487 | Preterm N=28610 |
|---------|------------------------|---------------|----------------|
|         | Treatment-exposed N=14868 | Nonexposed N=65522 | Treatment-exposed N=6730 | Nonexposed N=634757 | Treatment-exposed N=8138 | Nonexposed N=20472 |
|         | Median (IQR) | Median (IQR) | Median (IQR) | Median (IQR) | Median (IQR) | Median (IQR) |
| Psychological developmental disorders | | | | | | |
| Specific developmental disorders of speech and language (F80) | 4.2 (3.2 to 5.4) | 4.6 (3.7 to 5.9) | 4.6 (3.5 to 5.8) | 4.6 (3.7 to 5.9) | 4.0 (3.1 to 5.2) | 4.3 (3.2 to 5.6) |
| Specific developmental disorders of scholastic skills (F81) | 8.5 (6.9 to 10.1) | 9.1 (7.2 to 10.6) | 9.2 (7.8 to 10.8) | 9.1 (7.6 to 10.6) | 8.4 (6.5 to 9.6) | 9.1 (7.0 to 10.4) |
| Specific developmental disorder of motor function (F82) | 3.7 (1.0 to 5.3) | 5.1 (3.2 to 6.3) | 4.9 (2.3 to 6.3) | 5.1 (3.4 to 6.3) | 3.3 (0.9 to 5.1) | 4.5 (1.6 to 5.9) |
| Pervasive developmental disorder (F84) | 5.7 (3.3 to 8.6) | 6.8 (4.0 to 9.5) | 6.5 (4.1 to 8.8) | 6.9 (4.0 to 9.6) | 4.5 (3.0 to 8.1) | 6.6 (3.9 to 9.0) |
| Other or unspecified disorder of psychological development (F88, F89) | 6.5 (4.5 to 8.9) | 7.3 (5.6 to 9.5) | 6.3 (5.0 to 8.2) | 7.4 (5.6 to 9.5) | 6.5 (4.3 to 9.0) | 6.7 (4.8 to 9.0) |
| Neurosensory disorders |   |   |   |   |   |
|------------------------|---|---|---|---|---|
| Vision or hearing loss (H54, H90, H91) | 3.6 (0.9 to 6.2) | 5.2 (2.1 to 6.8) | 4.3 (1.1 to 6.4) | 5.2 (2.2 to 6.9) | 3.6 (0.9 to 6.0) | 4.1 (1.2 to 6.3) |
| Epilepsy (G40, G41) | 2.1 (0.7 to 4.3) | 3.0 (1.0 to 5.7) | 2.2 (0.7 to 4.3) | 3.0 (1.0 to 5.8) | 2.1 (0.7 to 4.2) | 2.3 (0.6 to 4.9) |
| Cerebral palsy (G80) | 2.0 (1.2 to 3.6) | 1.9 (1.0 to 3.6) | 3.2 (1.6 to 4.6) | 1.9 (1.0 to 3.8) | 2.0 (1.1 to 3.5) | 1.6 (0.9 to 2.6) |

F-, G-, and H-codes in parenthesis refer to International Statistical Classification of Diseases and Related Health Problems, tenth revision diagnostic codes.
**Table 3. Adjusted Hazard Ratios (HR) of Psychological Developmental and Neurosensory Disorders in Children Without Major Congenital Anomalies According to Maternal Antenatal Corticosteroid Treatment Exposure**

| Outcome                                                                 | Entire cohort N=638863<sup>a</sup> | Term N=613198<sup>a</sup> | Preterm N=25665<sup>a</sup> |
|------------------------------------------------------------------------|-------------------------------------|----------------------------|----------------------------|
|                                                                        | Adjusted HR (95% CI)                | Adjusted HR (95% CI)       | Adjusted HR (95% CI)       |
|                                                                        | <i>P</i>                             | <i>P</i>                    | <i>P</i>                    |
| **Psychological developmental disorders**                              |                                    |                            |                            |
| Specific developmental disorders of speech and language (F80)          | 1.40 (1.28 to 1.53)                | 1.48 (1.31 to 1.68)       | 1.07 (0.93 to 1.23)        | .37 |
| Specific developmental disorders of scholastic skills (F81)           | 1.29 (1.09 to 1.53)                | 1.24 (0.96 to 1.61)       | 1.10 (0.85 to 1.43)        | .47 |
| Specific developmental disorder of motor function (F82)               | 1.35 (1.19 to 1.54)                | 1.29 (1.02 to 1.63)       | 1.03 (0.86 to 1.24)        | .74 |
| Pervasive developmental disorder (F84)                                | 1.38 (1.18 to 1.61)                | 1.38 (1.11 to 1.73)       | 1.08 (0.83 to 1.40)        | .58 |
| Other or unspecified disorder of psychological development (F88, F89)  | 1.88 (1.55 to 2.27)                | 1.89 (1.47 to 2.43)       | 1.37 (0.96 to 1.95)        | .08 |
| **Neurosensory disorders**                                             |                                    |                            |                            |
| Vision or hearing loss (H54, H90, H91)                                 | 1.21 (1.00 to 1.48)                | 1.15 (0.85 to 1.57)       | 1.07 (0.79 to 1.44)        | .69 |
| Epilepsy (G40, G41)                                                   | 1.14 (0.92 to 1.40)                | 1.43 (1.07 to 1.92)       | 0.94 (0.68 to 1.29)        | .68 |
| Cerebral palsy (G80)                                                  | 1.41 (1.09 to 1.82)                | 2.61 (1.68 to 4.05)       | 1.05 (0.78 to 1.44)        | .72 |

<sup>a</sup>In adjusted analyses sample size for the entire cohort of children is 612314, for term-born children 588199, and for preterm-born children 24115.

Adjusted for maternal age at delivery, parity, mode of delivery, maternal smoking during pregnancy, pre-pregnancy body mass index, premature rupture of membranes (O42), gestational diabetes (O24), hypertension in pregnancy (O10, O13-O15), and child sex, Apgar score (maximum of 1 and 5 min), admission to neonatal intensive care unit, weight and gestational age at birth; for child psychological development disorders adjusted additionally for maternal mental and behavioral disorder diagnoses (F00-F99), for child vision and hearing disorders, adjusted additionally for maternal eye, adnexa, ear and mastoid disorder diagnoses (H00-H95), for child epilepsy and cerebral

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palsy, adjusted additionally for maternal nervous system disorder diagnoses (G00-G99); F-, G-, H-, and O-codes in parenthesis refer to International Statistical Classification of Diseases and Related Health Problems, tenth revision diagnostic codes.
**eTable 4. Adjusted Hazard Ratios (HR) of Psychological Developmental and Neurosensory Disorders in Children Born in 2006-2008 and 2009-2017 According to Maternal Antenatal Corticosteroid Treatment Exposure**

| Outcome                                      | Children born in 2006-2008 N=170361<sup>a</sup> | Children born in 2009-2017 N=499736<sup>a</sup> |
|----------------------------------------------|-----------------------------------------------|-----------------------------------------------|
|                                              | Adjusted HR (95% CI) | P      | Adjusted HR (95% CI) | P      |
| **Psychological developmental disorders**    |                                |        |                                |        |
| Specific developmental disorders of speech and language (F80) | 1.56 (1.31 to 1.85) | <.001  | 1.26 (1.15 to 1.39) | <.001  |
| Specific developmental disorders of scholastic skills (F81) | 1.59 (1.27 to 1.99) | <.001  | 1.05 (0.85 to 1.30) | .64    |
| Specific developmental disorder of motor function (F82) | 1.59 (1.26 to 1.99) | <.001  | 1.19 (1.03 to 1.36) | .01    |
| Pervasive developmental disorder (F84) | 1.53 (1.17 to 2.00) | .002   | 1.19 (1.00 to 1.42) | .05    |
| Other or unspecified disorder of psychological development (F88, F89) | 2.34 (1.71 to 3.20) | <.001  | 1.55 (1.25 to 1.92) | <.001  |
| **Neurosensory disorders**                   |                                |        |                                |        |
| Vision or hearing loss (H54, H90, H91)        | 1.43 (1.10 to 1.86) | .008   | 1.12 (0.92 to 1.38) | .26    |
| Epilepsy (G40, G41)                          | 0.89 (0.62 to 1.29) | .54    | 1.13 (0.91 to 1.39) | .27    |
| Cerebral palsy (G80)                         | 1.17 (0.77 to 1.78) | .55    | 1.18 (0.92 to 1.52) | .22    |

<sup>a</sup> In adjusted analyses sample size for the cohort of children born in 2006-2008 is 161931, and for the children born in 2009-2017 it is 480227. F-, G-, and H-codes in parenthesis refer to International Statistical Classification of Diseases and Related Health Problems, tenth revision diagnostic codes.