**Supplementary Material**

**Table S1: Definition of psychiatric history**

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| **Exclusion criteria** | **Codes** | **Sources** | **Comments** |
| Psychiatric history | All hospital admission for psychiatric illness or use of psychopharmacy | NPR, DNPR, PCRR |  |
|  Hospital admission for psychiatric illness | ICD-8: 29\*, 30\*; ICD-10: F0-F9, A-diagnosis | NPR, PCRR | At least one contact  |
|  Use of psychopharmacy | ATC: N05, N06 | DNPR | At least one dispensed prescription |

**Table S2: Definition of exposure**

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| **Exposure** | **Codes** | **Sources** | **Comments** |
| Thyroid disease |  |  |  |
| Any thyroid-related disease | ICD-8: 240-246;ICD-10: E00-E06;A and B-diagnosesATC: H03BB02, H03AA01, H03BB01, H03BA02 | NPR, DNPR | At least one diagnosis or prescription |
|  Hyperthyroidism | ICD-8: 24401, 24402, 24403, 24408, 24409; ICD-10: E05, E062;A and B-diagnosesMethimazole ATC: H03BB02, H03BB01;Propyltiouracil, ATC: H03BA02 | NPR, DNPR | At least one diagnosis or prescription |
|  Hypothyroidism | ICD-10: E02-03, E063; A and B-diagnosesLevothyroxine, ATC: H03AA01 | NPR, DNPR | At least one diagnosis or prescription |
|  Other thyroid disease | ICD-10: E00, E01, E04, E060, E061, E064, E065, E069No use of thyoid medication, ATC: H03BB02, H03AA01, H03BB01, H03BA02 | NPRDNPR | Any thyroid-related disease not qualifying as hyper- or hypothyroidism |
| Diabetes |  |  |  |
| Any type of diabetes | ICD-8: 249, 250;ICD-10: E10-14, H36.0, O24 (excluding O24.4); A and B-diagnosesATC: A10A\*, A10B\* | NPR, DNPR | At least one diagnosis or at least two prescriptions |
|  Type I/Insulin-dependent diabetes | For first diagnosis before 1995: <30 years at first diagnosis, after 1995: first prescription ATC= A10A | NPR, DNPR | At least one diagnosis or at least two prescriptions |
|  Type II/ Insulin nondependent | For first diagnosis before 1995: >=30 years at first diagnosis, after 1995: first prescription ATC= A10B | NPR, DNPR | At least one diagnosis or at least two prescriptions |
|  Other diabetes | ICD-10: E12, E13, E14, H360 (retinopathy) No consistent diabetes medication, i.e. maximum one prescription of A10A\*, A10B\* each. | NPR, DNPR | Any type of diabetes not qualifying as type I or type II diabetes.  |
| Gestational diabetes mellitus (GDM) | ICD-8: 63474;CD-10: O24.4;A and B-diagnoses | NPR |  |
| Polycystic ovary syndrome (PCOS) | ICD-8: 256.90;ICD-10: E28.2;A and B-diagnoses | NPR |  |

**Table S3: Definition of outcome**

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| **Outcome** | **Codes** | **Sources** | **Comments** |
| Postpartum depression | All hospital admission for depression or use of antidepressants within 6 months after delivery | NPR, DNPR, PCRR |  |
|  Hospital admission for depression | ICD-8: 29609, 29629, 29689, 29699, 29809, 30049, 3011.ICD-10: F320–F329.A-diagnosis | NPR, PCRR | At least one contact in 6 months after delivery |
|  Use of antidepressants | ATC: N06A | DNPR | At least one dispensed prescription in 6 months after delivery |

**Table S4: Definition of covariates**

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| **Covariate** | **Codes** | **Sources** | **Comments** |
| Calendar year | 1996-1999, 2000-2004, 2005-2009, 2010-2014, 2015-2018 | MBR, CPR |  |
| Maternal age at delivery | Grouped as <20, 20-24 25-29, 30-34, 35-39, 40+ years | CPR |  |
| Parity | Grouped as 0, 1, 2+ | CPR |  |
| Multiple delivery | Yes, no | MBR |  |
| Maternal education | Coded by DISCED and grouped as missing, unclassified, Short education: primary/lower secondary. Medium education: upper secondary/vocational/lower tertiary. Long education: Bachelor’s degree or equivalent/Master/Doctoral | Statistics Denmark |  |
| Cohabitation | Cohabitating/married: ’Registreret partnerskab’, ’Samboende par’, ’Samlevende par’, ’Ægtepar’, ’Ægtepar forskellig køn’, ’Ægtepar samme køn’.Living alone: ’Enlig’, ’Ikke hjemmeboende børn’. | Statistics Denmark | Based on the variable familie\_type |
| Employment status | Working: ’Lønmodtager’, ’Medarbejdende ægtefælle’, ’Selvstændig’. Not working: ’Arbejdsløs mindst halvdelen af året’, ’Børn under 15 år ultimo året’, ’Førtdspenstioner’, ’Efterlønsmodtager mv.’, ’Kontanthjælpsmodtager’, Modtager af sygedagpenge, uddannelsesgodtørelse, orlovsydelser mm.’, ’Under uddannelse’. | Statistics Denmark | Based on the variable pre\_socio |
| Length of follow-upa | Days until delivery and PPD, six months after delivery, death, emigration or 7 June 2018, whatever comes first | CPR, NPR, MBR |  |

Abbreviations: CPR Central Person Register(1), ICD8 International Classification of Diseases version 8, ICD10 International Classification of Diseases version 10, NPR National Patient Register(2), PCRR Psychiatric Central Research Register(3), DNPR Danish National Prescription Register(4), MBR Medical Birth Registry(5), ATC Anatomic Therapeutic Classification.

a Length of follow-up was included in all analyses to account for the fact that a small group of women (1.8% of the cohort) do not have 6 months of follow-up.

**Figure S1: Risk ratio (RR) of PPD by history of endocrine disorder in the last 10 years before pregnancy, in women WITH psychiatric history**

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Abbreviations: RR, risk ratio; PPD, postpartum depression; PCOS, polycystic ovary syndrome; GDM, gestational diabetes mellitus.

\* Adjusted for calendar year, length of follow-up, parity, multiple delivery, maternal education, cohabitation, employment status, calendar year\*maternal age.

**Table S5: Risk ratio (RR) of PPD by endocrine disease history, in women without psychiatric history, extended definitiona**

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| --- | --- | --- | --- |
| **Endocrine disease history**  | **Endocrine history** | **No Endocrine history** | **Endocrine history vs no history** |
|  | Deliveries (N) | No. of PPD cases (%) | Deliveries (N) | No. of PPD cases (%) |  RR (95% CI)b |
|  |  |  |  |  |  |  |
| Combined | 40,243 | 288 (0.72%) | 913,795 | 4,844 (0.53%) | 1.41 (1.25, 1.59) |
|  |
|  Thyroid disease | 18,748 | 128 (0.68%) | 935,290 | 5,004 (0.54%) | 1.38 (1.16, 1.65) |
|  |  |  |  |  |  |
|  Diabetes | 13,780 | 99 (0.72%) | 940,258 | 5,033 (0.54%) | 1.35 (1.11, 1.65) |
|  |  |  |
|  PCO | 7,095 | 57 (0.80%) | 946,943 | 5,075 (0.54%) | 1.50 (1.15, 1.94) |
|  |  |  |
|  GDM, previous pregnancy | 6,034 | 44 (0.73%) | 948,003 | 5,088 (0.54%) | 1.41 (1.05, 1.90) |

Abbreviations: RR, risk ratio; PPD, postpartum depression; PCOS, polycystic ovary syndrome; GDM, gestational diabetes mellitus.

a Psychiatric history defined as a hospital contact and/or 2 or more prescriptions of psychotropic drugs

b Adjusted for calendar year, length of follow-up, parity, multiple delivery, maternal education, cohabitation, employment status, calendar year\*maternal age.

**Table S6: External informationa on distribution of BMI and RR for PPD given BMI group used in the external adjustment for BMIb**

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| --- | --- | --- | --- |
| **BMI** | **No endocrine disorder** | **Endocrine disorder** | **RR**(6)**BMI vs PPD** |
| <18.5 | P01=8.7% | P11=5.6% | RR1=1.52 |
| 18.5-24 | 60.6% | 44.9% | Ref |
| 25-34 | P02=27.0% | P12=40.1% | RR2=1.04 |
| 35 | P03=3.7% | P13=9.4% | RR3=1.39 |

a Distribution of BMI in women with and without endocrine disorder is derived from unpublished register data.

b Calculation of adjusted RR adjusted for BMI as a polytomous confounder:(7)

RRadj=RRobs \* (RR1p01+ RR2p02 +RR3p03 + (1- p01 - p02 -p03))/ (RR1p11+ RR2p12 +RR3p13 + (1- p11 – p12 –p13)) = 1.42 \* (1.52\*0.087+1.04\*0.27+1.39\*0.037 + (1- 0.087 – 0.27 – 0.037))/(1.52\*0.056+1.04\*0.401+1.39\*0.094 + (1- 0.056 – 0.401 – 0.094))

= 1.41 with confidence interval (1.23, 1.60).

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