Supplemental Online Content

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This supplemental material has been provided by the authors to give readers additional information about their work.
EAppendix 1. Description of the source, the measurement, and the categorization of covariates

Information on calendar year of birth (1973-1978, 1979-1984, 1985-1990, 1991-1996, 1997-2002, 2003-2008, 2009-2016), sex (boy or girl), gestational age, birth weight, and multiple singleton birth was obtained from the Medical Birth Registers (MBR) in Denmark, Finland, and Sweden. Gestational age was based on routine ultrasound examinations performed in early second trimester or date of last menstrual period (LMP). Ultrasound examinations was not uniformly introduced until the mid-1990s in Denmark, Sweden, and Finland. In the rare event of missing information on ultrasound examinations, we used LMP (if it was available) to estimate gestational age. We excluded offspring with abnormal gestational age (<154 or >315 days) or with abnormal birth weight (more than five standard deviations below or above the mean).

Diagnoses of congenital anomalies in study participants were extracted from the Danish National Patient Register (DNPR), the Swedish Patient Register (SPR) and the Finnish Hospital Discharge Register (FHDR) using the International Statistical Classification of Diseases and Related Health Problems (ICD) codes: ICD-8/9: 740-759 and ICD-10: Q00-Q99.

Maternal country of origin (same as the study country versus not) and marital status before delivery (married/registered partnership versus not) was identified from the Danish Civil Registration System, the Finnish Central Population Register, and the Swedish Total Population Register. Data on the mother’s highest education before delivery was obtained from the Danish Integrated Database for Labour Market Research, the Education Register at Statistics Finland, and the Swedish Register of Education. From the MBR we also obtained data on maternal age at delivery (≤19, 20-24, 25-29, 30-34, and ≥35 years), parity (1, 2, ≥3), body mass index (BMI, not available in our Finnish data) and smoking (yes or no) in early pregnancy. Maternal BMI was categorized as underweight (BMI <18.5 kg/m²), normal weight (18.5–24.9 kg/m²), overweight (25.0–29.9 kg/m²), and obesity (≥30.0 kg/m²).

Information on maternal diabetes before delivery (including pregestational diabetes and gestational diabetes mellitus) was retrieved from the DNPR, FHDR, and Swedish MBR using the following ICD codes: (1) in Denmark: ICD-8: 249, 250; ICD-10: E10-E14, O24; (2) in Finland: ICD-9: 250, 648A, 648W; ICD-10: E10-E14, O24; and (3) in Sweden: ICD-8: 250; ICD-9: 250, 648A, 648W; ICD-10: E10-E14, O24. To retrieve information on maternal family history of CVDs before delivery, we identified the mother’s family members from the Danish Civil Registration System and the Swedish Multi-Generation Register, and then extracted their CVD diagnoses from the DNPR, the Danish Register of Cause of Death, the SPR, and the Swedish Cause of Death Register using ICD-8/9: 390–459 and ICD-10: 100-199.

Our criteria for selecting confounders were (1) a known or an a-priori hypothesized association with both exposure and outcome and (2) not being on the causal pathway between exposure and outcome.
eAppendix 2. Description of our sibling analysis

The sibling analysis included all sibling pairs from our whole population. Firstly, we identified the mothers who had two or more biological children, and created a sub-cohort of these sibling pairs. Secondly, we performed analyses in this sibling sub-cohort using a stratified Cox regression with a separate stratum for each family identified by the mother’s identification number. We adjusted for the same covariates as in the analyses involving the whole population. Only sibling pairs discordant for exposure and outcome contributed to the estimates in the analyses.

The sibling analysis included 7 031 134 sibling pairs with 2 808 293 mothers, among them 15 851 mothers had recurrent preeclampsia. The number of sibling pairs discordant for exposure to maternal preeclampsia and the diagnosis of ischemic heart disease or stroke in their lives was 290 027, 14 093, or 21 998, respectively.
| Data source                                         | Information                                                                 | Period covered                                      |
|----------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------|
| **Denmark**                                        |                                                                             |                                                   |
| Danish Civil Registration System                   | Sex, birth date, place of birth, vital status, linkage to parents and siblings, marital status, and migration | 1968-2016                                         |
| Danish Integrated Database for Labour Market Research | Mother’s highest completed educational attainment                           | 1980-2016                                         |
| Danish Medical Birth Register                      | Child’s birth date, sex, gestational age, birth weight, singleton status, mother’s body mass index (available since 2003) and smoking in early pregnancy (available since 1991), age at delivery and parity | 1973-2016                                         |
| Danish National Patient Register                   | Information on inpatient and outpatient care (diagnosis, date)              | Inpatient care: 1977-2016; outpatient care and emergency department contacts: 1995-2016 |
| Danish Register of Causes of Death                 | Date of death and cause of death                                            | 1970-2016                                         |
| **Finland**                                        |                                                                             |                                                   |
| Finnish Central Population Register                | Sex, date of birth, death, marital status, and migration                    | 1968-2014                                         |
| Education Register at Statistics Finland            | Mother’s highest completed educational attainment                           | 1970-2014                                         |
| Finnish Medical Birth Register                     | Child’s birth date, sex, gestational age, birth weight, singleton status, mother’s smoking in early pregnancy, age at delivery and parity | 1987-2014                                         |
| Finnish Hospital Discharge Register                | Information on inpatient and outpatient care (diagnosis, date)              | Inpatient care: 1969-2014; outpatient care contacts: 1998-2014 |
| Finnish Causes of Death Register                   | Date of death and cause of death                                            | 1969-2014                                         |
| **Sweden**                                         |                                                                             |                                                   |
| Swedish Total Population Register                  | Sex, birth date, place of birth, civil status, marital status, and migration | 1968-2014                                         |
| **Swedish Multi-Generation Register** | Relationships for all residents born since 1932. The index persons must have been registered since 1961 in order to be included. | 1961-2014 |
| **Swedish Register of Education** | Mother’s highest completed educational attainment | 1985-2014 |
| **Swedish Medical Birth Register** | Child’s birth date, sex, gestational age, birth weight, singleton status, mother’s age at delivery, parity, complications during pregnancy, smoking and body mass index during pregnancy (available since 1982) | 1973-2014 |
| **Swedish Patient Register** | Information on inpatient and outpatient care (diagnosis, date) | Inpatient care: 1964-2014 (Its coverage became nationwide since 1987); outpatient care: 2001-2014 |
| **Swedish Cause of Death Register** | Date and cause of death | 1952-2014 |
### eTable 2. International Classification of Diseases codes for hypertensive disorders of pregnancy

|                        | ICD-8                              | ICD-9                              | ICD-10                             |
|------------------------|------------------------------------|------------------------------------|------------------------------------|
| **Pre-existing chronic hypertension** |                                     |                                    |                                    |
| Denmark a              | 400.09, 400.19, 400.29, 400.39, 400.99, 401.99 |                                     | I10, I11, I12, I13, I15, O10, O11   |
| Finland b              | 4019, 4029, 4039, 4040, 4059, 6420, 6421, 6422, 6427 |                                    | I10, I11, I12, I13, I15, O10, O11   |
| Sweden c               | 400, 401, 402, 403, 404             | 401, 402, 403, 404, 405, 642A, 642B, 642C, 642H | I10, I11, I12, I13, I15, O10, O11   |
| **Gestational hypertension** |                                     |                                    |                                    |
| Denmark a              | 637.00, 760.29                      |                                    | O13, O16                           |
| Finland b              |                                    | 6423, 6429                         | O13, O16                           |
| Sweden c               | 637.01                             | 642D, 642X                         | O13, O16                           |
| **Preeclampsia**       |                                     |                                    |                                    |
| Denmark a              | 637.03, 637.04, 637.09, 637.19      |                                    | O14, O15                           |
| Finland b              |                                    | 6424, 6425, 6426                   | O14, O15                           |
| Sweden c               | 637.03, 637.04, 637.09, 637.99, 637.10 | 642E, 642F, 642G                 | O14, O15                           |
| **Mild/moderate preeclampsia** |                                     |                                    |                                    |
| Denmark a              | 637.03, 637.09                      |                                    | O14.0, O14.9                       |
| Finland b              |                                    | 6424                               | O14.0, O14.9                       |
| Sweden c               | 637.03, 637.09, 637.99             | 642E                               | O14.0, O14.9                       |
| **Severe preeclampsia** |                                     |                                    |                                    |
| Denmark a              | 637.04, 637.19                      |                                    | O14.1, O14.2, O15                 |
| Finland b              |                                    | 6425, 6426                         | O14.1, O15                         |
| Sweden c               | 637.04, 637.10                      | 642F, 642G                         | O14.1, O14.2, O15                 |

**Abbreviations:** ICD, International Statistical Classification of Diseases and Related Health Problems.

- a In Denmark, the information about maternal hypertensive disorders during pregnancy was extracted from the Danish National Patient Register. We used ICD-8 up to 1995 and ICD-10 afterwards.
- b In Finland, the information about maternal hypertensive disorders during pregnancy was extracted from the Finnish Hospital Discharge Register. We used ICD-9 up to 1995 and ICD-10 afterwards.
- c In Sweden, the information about maternal hypertensive disorders during pregnancy was extracted from the Swedish Medical Birth Register. We used ICD-8 up to 1986, ICD-9 from 1987 to 1996, and ICD-10 afterwards.
**eTable 3. International Classification of Diseases codes for ischemic heart disease and stroke**

|                      | ICD-8                  | ICD-9                  | ICD-10                 |
|----------------------|------------------------|------------------------|------------------------|
| **Ischemic heart disease** |                        |                        |                        |
| Denmark              | 410-414                |                        | I20-I25                |
| Finland              | 4100, 4109, 4110, 4120, 4121, 4131, 4140, 4148, 4149 |                        | I20-I25                |
| Sweden               | 410-414                | 410-414                | I20-I25                |
| **Stroke**           |                        |                        |                        |
| Denmark              | 430, 431, 433, 434, 436 |                        | I60, I61, I63, I64    |
| Finland              | 430, 431, 433, 434, 436 |                        | I60, I61, I63, I64    |
| Sweden               | 430, 431, 433, 434, 436 | 430, 431, 433, 434, 436 | I60, I61, I63, I64    |
| **Hemorrhagic stroke** |                        |                        |                        |
| Denmark              | 430, 431                |                        | I60, I61               |
| Finland              | 430, 431                |                        | I60, I61               |
| Sweden               | 430, 431                | 430, 431               | I60, I61               |
| **Ischemic stroke**  |                        |                        |                        |
| Denmark              | 433, 434                |                        | I63, I64               |
| Finland              | 433, 434                |                        | I63, I64               |
| Sweden               | 433, 434                | 433, 434               | I63, I64               |

Abbreviations: ICD, International Statistical Classification of Diseases and Related Health Problems.

* In Denmark, the information about ischemic heart disease and stroke and its subtypes was extracted from the Danish National Patient Register and the Danish Register of Cause of Death. We used the Danish version of ICD-8 up to 1995 and ICD-10 afterwards.

* In Finland, the information about ischemic heart disease and stroke and its subtypes was extracted from the Finnish Hospital Discharge Register and Finnish Caused of Death Register. We used the Finnish version of ICD-9 up to 1995 and ICD-10 afterwards.

* In Sweden, the information about ischemic heart disease and stroke and its subtypes was extracted from the Swedish Patient Register and the Swedish Cause of Death Register. We used the Swedish version of ICD-8 up to 1986, ICD-9 from 1987 to 1996, and ICD-10 afterwards.
**eTable 4. The number and rates of preeclampsia according to its severity**

|                                     | Mild/moderate preeclampsia N (%) | Severe preeclampsia N (%) |
|-------------------------------------|----------------------------------|----------------------------|
| **Timing of onset**                 |                                  |                            |
| Late-onset                          | 118 187 (86.7)                   | 31 001 (66.7)              |
| Early-onset                         | 18 177 (13.3)                    | 15 506 (33.3)              |
| **Preeclampsia with/without SGA**   |                                  |                            |
| Without SGA                         | 109 908 (80.6)                   | 27 451 (59.0)              |
| With SGA                            | 26 456 (19.4)                    | 19 056 (41.0)              |

Abbreviations: SGA, small for gestational age (i.e., birth weight below the 10th percentile of the Swedish sex-specific standard curve for normal fetal growth); HR
eTable 5. Incidence rates and hazard ratios with 95% confidence intervals for ischemic heart disease and stroke according to preeclampsia, by attained age

| Exposure                        | Number of events | Rate, per 10,000 person-years | Crude HR (95% CI) | Adjusted HR (95% CI) a |
|---------------------------------|------------------|--------------------------------|-------------------|------------------------|
| **Ischemic heart disease**      |                  |                                |                   |                        |
| **Attained age <18 years**      |                  |                                |                   |                        |
| Normotensive pregnancy          | 1,021            | 0.09                           | 1.00              | 1.00                   |
| Preeclampsia                    | 27               | 0.11                           | 1.23 (0.84-1.80)  | 1.07 (0.73-1.57)       |
| **Attained age ≥18 years**      |                  |                                |                   |                        |
| Normotensive pregnancy          | 6,216            | 1.30                           | 1.00              | 1.00                   |
| Preeclampsia                    | 106              | 1.45                           | 1.59 (1.31-1.93)  | 1.42 (1.20-2.07)       |
| **Stroke**                      |                  |                                |                   |                        |
| **Attained age <18 years**      |                  |                                |                   |                        |
| Normotensive pregnancy          | 3,408            | 0.31                           | 1.00              | 1.00                   |
| Preeclampsia                    | 126              | 0.52                           | 1.69 (1.41-2.02)  | 1.57 (1.31-1.88)       |
| **Attained age ≥18 years**      |                  |                                |                   |                        |
| Normotensive pregnancy          | 7,137            | 1.49                           | 1.00              | 1.00                   |
| Preeclampsia                    | 107              | 1.47                           | 1.20 (0.99-1.45)  | 1.13 (0.93-1.37)       |

Abbreviations: HR, hazard ratio; CI, confidence interval.

a We adjusted for calendar year of birth, sex, maternal parity, age, education, marital status, and diabetes before childbirth.
eTable 6. Incidence rates and hazard ratios with 95% confidence intervals for stroke subtypes according to maternal preeclampsia and its subtypes

| Exposure                        | Hemorrhagic stroke | Ischemic stroke |
|---------------------------------|--------------------|-----------------|
|                                 | Number of events   | Rate, per 10,000 person-years | Crude HR (95% CI) | Adjusted HR (95% CI) a | Number of events | Rate, per 10,000 person-years | Crude HR (95% CI) | Adjusted HR (95% CI) a |
| Normotensive pregnancy          | 4,848              | 0.31            | 1.00            | 1.00                        | 5,597              | 0.35            | 1.00            | 1.00                        |
| Preeclampsia                    | 101                | 0.32            | 1.25 (1.03-1.53) | 1.23 (1.01-1.50)           | 131                | 0.42            | 1.61 (1.35-1.91) | 1.44 (1.21-1.72)           |
| Onset of preeclampsia           |                    |                 |                 |                             |                    |                 |                             |                             |
| Late onset                      | 65                 | 0.26            | 1.07 (0.84-1.37) | 1.03 (0.81-1.32)           | 91                 | 0.36            | 1.51 (1.23-1.86) | 1.34 (1.09-1.65)           |
| Early onset                     | 27                 | 0.58            | 2.61 (1.79-3.82) | 2.50 (1.71-3.66)           | 32                 | 0.68            | 3.13 (2.21-4.43) | 2.55 (1.80-3.61)           |
| Severity of preeclampsia        |                    |                 |                 |                             |                    |                 |                             |                             |
| Mild/moderate                   | 73                 | 0.30            | 1.13 (0.90-1.43) | 1.11 (0.88-1.40)           | 97                 | 0.40            | 1.47 (1.20-1.80) | 1.33 (1.09-1.63)           |
| Severe                          | 28                 | 0.40            | 1.74 (1.20-2.52) | 1.74 (1.20-2.52)           | 34                 | 0.49            | 2.22 (1.58-3.10) | 1.91 (1.36-2.67)           |
| Preeclampsia with/without SGA   |                    |                 |                 |                             |                    |                 |                             |                             |
| Without SGA                     | 62                 | 0.27            | 1.16 (0.90-1.49) | 1.11 (0.86-1.43)           | 86                 | 0.38            | 1.61 (1.30-1.99) | 1.41 (1.14-1.74)           |
| With SGA                        | 30                 | 0.42            | 1.80 (1.26-2.58) | 1.74 (1.22-2.50)           | 36                 | 0.50            | 2.18 (1.57-3.02) | 1.90 (1.37-2.64)           |
Other hypertensive disorders during pregnancy

|                                      | Weight | SGA | HR (95% CI)  | Weight | SGA | HR (95% CI) |
|--------------------------------------|--------|-----|-------------|--------|-----|-------------|
| Pre-existing chronic hypertension    | 15     | 0.35| 1.80 (1.08-2.99) | 15     | 0.35| 1.86 (1.12-3.10) |
| Gestational hypertension             | 45     | 0.29| 1.17 (0.87-1.56) | 67     | 0.43| 1.71 (1.34-2.18) |

Abbreviations: SGA, small for gestational age (i.e., birth weight below the 10th percentile of the Swedish sex-specific standard curve for normal fetal growth); HR, hazard ratio; CI, confidence interval.

*We adjusted for calendar year of birth, sex, maternal parity, age, education, marital status, and diabetes before childbirth.
### eTable 7. Incidence rates and hazard ratios with 95% confidence intervals for ischemic heart disease and stroke according to preeclampsia, stratified by study country

| Exposure                  | Number of events | Rate, per 10,000 person-years | Crude HR (95% CI) | Adjusted HR (95% CI) | P-value for interaction |
|---------------------------|------------------|--------------------------------|-------------------|----------------------|-------------------------|
|                          |                  |                                |                   |                      |                         |
| **Ischemic heart disease** |                  |                                |                   |                      |                         |
| **Denmark**               |                  |                                |                   |                      |                         |
| Normotensive pregnancy    | 4,972            | 0.90                           | 1.00              | 1.00                 |                         |
| Preeclampsia              | 98               | 0.68                           | 1.11 (0.91-1.36)  | 1.09 (0.89-1.33)     |                         |
| **Sweden**                |                  |                                |                   |                      | 0.92                    |
| Normotensive pregnancy    | 1,457            | 0.18                           | 1.00              | 1.00                 |                         |
| Preeclampsia              | 16               | 0.13                           | 1.45 (0.88-2.37)  | 1.37 (0.83-2.25)     |                         |
| **Finland**               |                  |                                |                   |                      | 0.28                    |
| Normotensive pregnancy    | 808              | 0.37                           | 1.00              | 1.00                 |                         |
| Preeclampsia              | 19               | 0.43                           | 1.10 (0.70-1.73)  | 1.14 (0.72-1.79)     |                         |
| **Stroke**                |                  |                                |                   |                      |                         |
| **Denmark**               |                  |                                |                   |                      |                         |
| Normotensive pregnancy    | 5,357            | 0.97                           | 1.00              | 1.00                 |                         |
| Preeclampsia              | 144              | 1.00                           | 1.26 (1.07-1.48)  | 1.22 (1.04-1.44)     |                         |
| **Sweden**                |                  |                                |                   |                      | 0.86                    |
| Normotensive pregnancy    | 4,250            | 0.52                           | 1.00              | 1.00                 |                         |
| Preeclampsia              | 63               | 0.50                           | 1.36 (1.06-1.74)  | 1.24 (0.97-1.59)     |                         |
| **Finland**               |                  |                                |                   |                      | 0.71                    |
| Normotensive pregnancy    | 938              | 0.43                           | 1.00              | 1.00                 |                         |
| Preeclampsia              | 26               | 0.58                           | 1.32 (0.89-1.95)  | 1.32 (0.89-1.94)     |                         |

Abbreviations: HR, hazard ratio; CI, confidence interval.

* We adjusted for calendar year of birth, sex, maternal parity, age, education, marital status, and diabetes before childbirth.
Table 8. Incidence rates and hazard ratios with 95% confidence intervals for ischemic heart disease and stroke according to preeclampsia, stratified by the child’s sex

| Exposure                        | Number of events | Rate, per 10,000 person-years | Crude HR (95% CI) | Adjusted HR (95% CI) a | P-value for interaction |
|---------------------------------|------------------|-------------------------------|-------------------|-------------------------|-------------------------|
| **Ischemic heart disease** b    |                  |                               |                   |                         |                         |
| **Boys**                       |                  |                               |                   |                         |                         |
| Normotensive pregnancy          | 4,640            | 0.57                          | 1.00              | 1.00                    | 1.00                    |
| Preeclampsia                    | 80               | 0.49                          | 1.33 (1.06-1.66)  | 1.26 (1.01-1.57)        | 0.42                    |
| **Girls**                      |                  |                               |                   |                         |                         |
| Normotensive pregnancy          | 2,597            | 0.34                          | 1.00              | 1.00                    |                         |
| Preeclampsia                    | 53               | 0.35                          | 1.53 (1.17-2.01)  | 1.47 (1.12-1.93)        |                         |
| **Stroke** b                    |                  |                               |                   |                         |                         |
| **Boys**                        |                  |                               |                   |                         |                         |
| Normotensive pregnancy          | 5,493            | 0.67                          | 1.00              | 1.00                    | 0.95                    |
| Preeclampsia                    | 124              | 0.76                          | 1.36 (1.13-1.62)  | 1.32 (1.11-1.58)        |                         |
| **Girls**                       |                  |                               |                   |                         |                         |
| Normotensive pregnancy          | 5,052            | 0.65                          | 1.00              | 1.00                    |                         |
| Preeclampsia                    | 109              | 0.72                          | 1.38 (1.14-1.67)  | 1.35 (1.11-1.63)        |                         |

Abbreviations: HR, hazard ratio; CI, confidence interval.

a We adjusted for calendar year of birth, maternal parity, age, education, marital status, and diabetes before childbirth.
**eTable 9. Incidence rates and hazard ratios with 95% confidence intervals for ischemic heart disease and stroke according to preeclampsia and its subtypes, in children without congenital anomalies**

| Exposure                           | Ischemic heart disease | Stroke |
|------------------------------------|------------------------|--------|
|                                    | Number of events | Rate, per 10,000 person-years | Crude HR (95% CI) | Adjusted HR (95% CI) a | Number of events | Rate, per 10,000 person-years | Crude HR (95% CI) | Adjusted HR (95% CI) a |
| Normotensive pregnancy             | 5,940 | 0.41 | 1.00 | 1.00 | 8,001 | 0.55 | 1.00 | 1.00 |
| Preeclampsia                       | 96 | 0.35 | 1.35 (1.10-1.65) | 1.28 (1.04-1.57) | 155 | 0.56 | 1.28 (1.09-1.50) | 1.25 (1.06-1.46) |
| **Onset of preeclampsia**          | | | | | | | | |
| Late onset                         | 66 | 0.29 | 1.31 (1.03-1.68) | 1.25 (0.98-1.60) | 106 | 0.47 | 1.14 (0.94-1.38) | 1.12 (0.92-1.35) |
| Early onset                        | 13 | 0.34 | 1.73 (1.01-2.98) | 1.62 (0.94-2.79) | 36 | 0.94 | 2.38 (1.72-3.31) | 2.32 (1.67-3.22) |
| **Severity of preeclampsia**       | | | | | | | | |
| Mild/moderate                      | 78 | 0.36 | 1.32 (1.06-1.65) | 1.24 (0.99-1.56) | 114 | 0.53 | 1.16 (0.97-1.40) | 1.13 (0.94-1.36) |
| Severe                             | 18 | 0.30 | 1.46 (0.92-2.32) | 1.45 (0.91-2.31) | 41 | 0.68 | 1.75 (1.29-2.38) | 1.74 (1.28-2.36) |
| **Preeclampsia with/without SGA**  | | | | | | | | |
| Without SGA                        | 58 | 0.29 | 1.51 (1.16-1.95) | 1.23 (0.95-1.59) | 102 | 0.51 | 1.31 (1.08-1.60) | 1.20 (0.99-1.46) |
| With SGA                           | 21 | 0.35 | 1.87 (1.22-2.87) | 1.58 (1.03-2.43) | 39 | 0.64 | 1.69 (1.24-2.32) | 1.56 (1.14-2.14) |
| **Other hypertensive disorders during pregnancy** | | | | | | | | |
| Pre-existing chronic hypertension  | 7 | 0.18 | 1.23 (0.58-2.58) | 1.21 (0.57-2.54) | 23 | 0.60 | 1.73 (1.15-2.61) | 1.77 (1.18-2.68) |
| Gestational hypertension           | 54 | 0.38 | 1.59 (1.21-2.08) | 1.58 (1.21-2.07) | 80 | 0.57 | 1.32 (1.06-1.65) | 1.34 (1.07-1.67) |

Abbreviations: SGA, small for gestational age (i.e., birth weight below the 10th percentile of the Swedish sex-specific standard curve for normal fetal growth); HR, hazard ratio; CI, confidence interval. 

a We adjusted for calendar year of birth, sex, maternal parity, age, education, marital status, and diabetes before childbirth.
### eTable 10. Incidence rates and hazard ratios with 95% confidence intervals for ischemic heart disease and stroke according to preeclampsia and its subtypes, in children with information on maternal country of origin

| Exposure                                      | Ischemic heart disease | Stroke |                 |                  |                 |                  |                  |                 |
|-----------------------------------------------|------------------------|--------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                                               | Rate, per 10,000 person-years | Adjusted HR in the whole population (95% CI) | Adjusted HR in the restricted population (95% CI) | Adjusted HR in the restricted population (95% CI) | Rate, per 10,000 person-years | Adjusted HR in the whole population (95% CI) | Adjusted HR in the restricted population (95% CI) | Adjusted HR in the restricted population (95% CI) |
| Normotensive pregnancy                        | 0.47                   | 1.00   | 1.00            | 1.00            | 0.70            | 1.00            | 1.00            | 1.00            |
| Preeclampsia                                  | 0.42                   | 1.33 (1.12-1.58) | 1.43 (1.19-1.73) | 1.44 (1.20-1.74) | 0.77            | 1.34 (1.17-1.52) | 1.34 (1.17-1.54) | 1.34 (1.16-1.54) |
| Onset of preeclampsia                         |                        |        |                 |                 |                 |                 |                 |                 |
| Late onset                                    | 0.36                   | 1.31 (1.06-1.61) | 1.48 (1.18-1.85) | 1.48 (1.18-1.85) | 0.66            | 1.18 (1.01-1.39) | 1.22 (1.03-1.44) | 1.22 (1.03-1.44) |
| Early onset                                   | 0.36                   | 1.62 (1.03-2.55) | 1.66 (0.98-2.81) | 1.68 (0.99-2.84) | 1.27            | 2.55 (1.97-3.28) | 2.45 (1.85-3.24) | 2.45 (1.85-3.24) |
| Severity of preeclampsia                      |                        |        |                 |                 |                 |                 |                 |                 |
| Mild/moderate                                 | 0.47                   | 1.33 (1.10-1.61) | 1.46 (1.17-1.83) | 1.47 (1.20-1.80) | 0.77            | 1.22 (1.05-1.42) | 1.28 (1.09-1.49) | 1.27 (1.09-1.49) |
| Severe                                        | 0.27                   | 1.33 (0.89-2.01) | 1.29 (0.79-2.11) | 1.29 (0.79-2.11) | 0.84            | 1.81 (1.41-2.32) | 1.60 (1.21-2.13) | 1.60 (1.21-2.13) |
| Preeclampsia with/without SGA                 |                        |        |                 |                 |                 |                 |                 |                 |
| Without SGA                                   | 0.35                   | 1.32 (1.06-1.64) | 1.41 (1.10-1.80) | 1.42 (1.11-1.81) | 0.69            | 1.25 (1.07-1.48) | 1.30 (1.09-1.54) | 1.29 (1.09-1.54) |
| With SGA                                      | 0.42                   | 1.50 (1.03-2.18) | 1.81 (1.22-2.69) | 1.82 (1.23-2.70) | 0.93            | 1.84 (1.44-2.34) | 1.78 (1.36-2.31) | 1.78 (1.36-2.31) |
| Other hypertensive disorders during pregnancy  |                        |        |                 |                 |                 |                 |                 |                 |
| Pre-existing chronic hypertension             | 0.37                   | 1.72 (1.02-2.92) | 2.24 (1.20-4.18) | 2.27 (1.22-4.22) | 0.78            | 1.60 (1.12-2.30) | 1.64 (1.07-2.52) | 1.64 (1.07-2.53) |
| Gestational hypertension                      | 0.44                   | 1.44 (1.12-1.84) | 1.44 (1.08-1.94) | 1.45 (1.08-1.95) | 0.86            | 1.40 (1.16-1.68) | 1.45 (1.18-1.79) | 1.45 (1.17-1.79) |

Abbreviations: SGA, small for gestational age (i.e., birth weight below the 10th percentile of the Swedish sex-specific standard curve for normal fetal growth); HR, hazard ratio; CI, confidence interval.

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a In the whole population, we adjusted for calendar year of birth, sex, maternal parity, age, education, marital status, and diabetes before childbirth.

b In study participants with information on maternal country of origin, we adjusted for calendar year of birth, sex, maternal parity, age, education, marital status, and diabetes before childbirth.

c In study participants with information on maternal country of origin, we further adjusted for maternal country of origin.
### Table 11. Incidence rates and hazard ratios with 95% confidence intervals for ischemic heart disease and stroke according to preeclampsia and its subtypes, in children with information on maternal smoking during early pregnancy

| Exposure                              | Rate, per 10,000 person-years | Ischemic heart disease | Stroke |
|--------------------------------------|-------------------------------|------------------------|--------|
|                                      |                               | Adjusted HR in the whole population (95% CI) | Adjusted HR in the restricted population (95% CI) | Adjusted HR in the restricted population (95% CI) | Adjusted HR in the whole population (95% CI) | Adjusted HR in the restricted population (95% CI) | Adjusted HR in the restricted population (95% CI) |
| Normotensive pregnancy               | 0.17                          | 1.00                   | 1.00   | 0.41 | 1.00 | 1.00 | 1.00 |
| Preeclampsia                         | 0.22                          | 1.33 (1.12-1.58)       | 1.20 (0.90-1.62) | 1.23 (0.92-1.65) | 0.53 | 1.34 (1.17-1.52) | 1.28 (1.06-1.54) | 1.29 (1.07-1.56) |
| **Onset of preeclampsia**            |                               |                        |        |      |      |      |      |
| Late onset                           | 0.21                          | 1.31 (1.06-1.61)       | 1.18 (0.86-1.63) | 1.21 (0.88-1.68) | 0.45 | 1.18 (1.01-1.39) | 1.07 (0.86-1.34) | 1.09 (0.87-1.36) |
| Early onset                          | 0.23                          | 1.62 (1.03-2.55)       | 1.37 (0.68-2.75) | 1.38 (0.69-2.76) | 0.99 | 2.55 (1.97-3.28) | 2.36 (1.68-3.31) | 2.37 (1.69-3.32) |
| **Severity of preeclampsia**         |                               |                        |        |      |      |      |      |
| Mild/moderate                        | 0.23                          | 1.33 (1.10-1.61)       | 1.25 (0.90-1.75) | 1.28 (0.92-1.78) | 0.47 | 1.22 (1.05-1.42) | 1.11 (0.88-1.40) | 1.12 (0.89-1.41) |
| Severe                               | 0.18                          | 1.33 (0.89-2.01)       | 1.05 (0.56-1.96) | 1.09 (0.58-2.02) | 0.73 | 1.81 (1.41-2.32) | 1.77 (1.30-2.42) | 1.80 (1.32-2.46) |
| **Preeclampsia with/without SGA**    |                               |                        |        |      |      |      |      |
| Without SGA                          | 0.24                          | 1.32 (1.06-1.64)       | 1.33 (0.96-1.84) | 1.37 (0.99-1.89) | 0.45 | 1.25 (1.07-1.48) | 1.06 (0.84-1.34) | 1.08 (0.85-1.36) |
| With SGA                             | 0.15                          | 1.50 (1.03-2.18)       | 0.88 (0.44-1.75) | 0.88 (0.44-1.77) | 0.83 | 1.84 (1.44-2.34) | 1.98 (1.46-2.67) | 1.99 (1.47-2.68) |
| **Other hypertensive disorders during pregnancy** |                               |                        |        |      |      |      |      |
| Pre-existing chronic hypertension    | 0.26                          | 1.72 (1.02-2.92)       | 1.66 (0.89-3.10) | 1.68 (0.90-3.14) | 0.52 | 1.60 (1.12-2.30) | 1.28 (0.82-1.99) | 1.29 (0.83-2.01) |
| Gestational hypertension             | 0.24                          | 1.44 (1.12-1.84)       | 1.34 (0.92-1.94) | 1.36 (0.93-1.97) | 0.63 | 1.40 (1.16-1.68) | 1.49 (1.18-1.88) | 1.50 (1.19-1.89) |

Abbreviations: SGA, small for gestational age (i.e., birth weight below the 10th percentile of the Swedish sex-specific standard curve for normal fetal growth); HR, hazard ratio; CI, confidence interval.

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In the whole population, we adjusted for calendar year of birth, sex, maternal parity, age, education, marital status, and diabetes before childbirth.

In study participants with information on maternal smoking during pregnancy, we adjusted for calendar year of birth, sex, maternal parity, age, education, marital status, and diabetes before childbirth.

In study participants with information on maternal smoking during pregnancy, we further adjusted for maternal smoking during early pregnancy.
**eTable 12. Incidence rates and hazard ratios with 95% confidence intervals for ischemic heart disease and stroke according to preeclampsia and its subtypes, in children with information on maternal body mass index during early pregnancy**

| Exposure                        | Ischemic heart disease | Stroke | | | | | | | |
|---------------------------------|------------------------|--------|-----|-----|-----|-----|-----|-----|
|                                 | Rate, per 10,000 person-years | Adjusted HR in the whole population (95% CI) | Adjusted HR in the restricted population (95% CI) | Adjusted HR in the restricted population (95% CI) | Rate, per 10,000 person-years | Adjusted HR in the whole population (95% CI) | Adjusted HR in the restricted population (95% CI) | Adjusted HR in the restricted population (95% CI) |
| **Normotensive pregnancy**      |                        |        |     |     |     |     |     |     |
|                                 | 0.09                   | 1.00   | 1.00| 1.00| 0.41| 1.00 | 1.00 | 1.00 |
| **Preeclampsia**                |                        |        |     |     |     |     |     |     |
|                                 | 0.10                   | 1.33 (1.12-1.58) | 1.24 (0.66-2.33) | 1.21 (0.64-2.27) | 0.57 | 1.34 (1.17-1.52) | 1.38(1.06-1.80) | 1.35 (1.04-1.76) |
| **Onset of preeclampsia**       |                        |        |     |     |     |     |     |     |
| Late onset                      | 0.10                   | 1.31 (1.06-1.61) | 1.28 (0.66-2.48) | 1.24 (0.64-2.42) | 0.50 | 1.18 (1.01-1.39) | 1.22 (0.91-1.65) | 1.20 (0.89-1.62) |
| Early onset                     | 0.08                   | 1.62 (1.03-2.55) | 0.98 (0.14-7.01) | 0.96 (0.13-6.84) | 1.10 | 2.55 (1.97-3.28) | 2.34 (1.38-3.97) | 2.29 (1.35-3.88) |
| **Severity of preeclampsia**    |                        |        |     |     |     |     |     |     |
| Mild/moderate                   | 0.11                   | 1.33 (1.10-1.61) | 1.33 (0.66-2.69) | 1.29 (0.64-2.61) | 0.57 | 1.22 (1.05-1.42) | 1.37 (1.01-1.86) | 1.34 (0.99-1.83) |
| Severe                          | 0.07                   | 1.33 (0.89-2.01) | 0.98 (0.24-3.93) | 0.96 (0.24-3.84) | 0.58 | 1.81 (1.41-2.32) | 1.41 (0.86-2.30) | 1.38 (0.84-2.26) |
| **Preeclampsia with/without SGA** |                      |        |     |     |     |     |     |     |
| Without SGA                     | 0.08                   | 1.32 (1.06-1.64) | 0.97 (0.43-2.17) | 0.94 (0.42-2.11) | 0.49 | 1.25 (1.07-1.48) | 1.17 (0.85-1.63) | 1.14 (0.82-1.59) |
| With SGA                        | 0.17                   | 1.50 (1.03-2.18) | 2.12 (0.79-5.69) | 2.09 (0.78-5.60) | 0.87 | 1.84 (1.44-2.34) | 2.11 (1.37-3.24) | 2.07 (1.34-3.19) |
| **Other hypertensive disorders during pregnancy** | | | | | | | | |
| Pre-existing chronic hypertension | 0.30                   | 1.72 (1.02-2.92) | 3.76 (1.39-10.14) | 3.64 (1.35-9.84) | 0.52 | 1.60 (1.12-2.30) | 1.14 (0.54-2.40) | 1.10 (0.52-2.33) |
| Gestational hypertension        | 0.14                   | 1.44 (1.12-1.84) | 1.62 (0.72-3.62) | 1.57 (0.70-3.53) | 0.72 | 1.40 (1.16-1.68) | 1.63 (1.14-2.34) | 1.60 (1.11-2.30) |

Abbreviations: SGA, small for gestational age (i.e., birth weight below the 10th percentile of the Swedish sex-specific standard curve for normal fetal growth); HR, hazard ratio; CI, confidence interval.
In the whole population, we adjusted for calendar year of birth, sex, maternal parity, age, education, marital status, and diabetes before childbirth.

In study participants with information on maternal body mass index during pregnancy, we adjusted for calendar year of birth, sex, maternal parity, age, education, marital status, and diabetes before childbirth.

In study participants with information on maternal body mass index during pregnancy, we further adjusted for maternal body mass index during early pregnancy.
**eTable 13. Incidence rates and hazard ratios with 95% confidence intervals for ischemic heart disease and stroke according to preeclampsia and its subtypes, in children with information on maternal family history of cardiovascular diseases**

| Exposure                        | Ischemic heart disease | Stroke |
|---------------------------------|------------------------|--------|
|                                 | Rate, per 10,000 person-years | Adjusted HR in the whole population (95% CI) | Adjusted HR in the restricted population (95% CI) | Adjusted HR in the restricted population (95% CI) | Rate, per 10,000 person-years | Adjusted HR in the whole population (95% CI) | Adjusted HR in the restricted population (95% CI) | Adjusted HR in the restricted population (95% CI) |
| Normotensive pregnancy          | 0.47                   | 1.00   | 1.00 | 1.00 | 0.70 | 1.00 | 1.00 | 1.00 |
| Preeclampsia                    | 0.42                   | 1.33 (1.12-1.58) | 1.43 (1.19-1.72) | 1.43 (1.19-1.73) | 0.77 | 1.34 (1.17-1.52) | 1.34 (1.16-1.54) | 1.34 (1.16-1.54) |

**Onset of preeclampsia**

|                             | Rate, per 10,000 person-years | Adjusted HR in the whole population (95% CI) | Adjusted HR in the restricted population (95% CI) | Adjusted HR in the restricted population (95% CI) |
|-----------------------------|--------------------------------|---------------------------------------------|--------------------------------------------|---------------------------------------------|
| Late onset                  | 0.36                           | 1.31 (1.06-1.61) | 1.46 (1.17-1.83) | 1.46 (1.17-1.83) | 0.66 | 1.18 (1.01-1.39) | 1.22 (1.03-1.44) | 1.22 (1.03-1.46) |
| Early onset                 | 0.36                           | 1.62 (1.03-2.55) | 1.66 (0.98-2.80) | 1.66 (0.98-2.81) | 1.27 | 2.55 (1.97-3.28) | 2.45 (1.85-3.24) | 2.44 (1.85-3.23) |

**Severity of preeclampsia**

|                             | Rate, per 10,000 person-years | Adjusted HR in the whole population (95% CI) | Adjusted HR in the restricted population (95% CI) | Adjusted HR in the restricted population (95% CI) |
|-----------------------------|--------------------------------|---------------------------------------------|--------------------------------------------|---------------------------------------------|
| Mild/moderate               | 0.47                           | 1.33 (1.10-1.61) | 1.46 (1.19-1.78) | 1.46 (1.19-1.78) | 0.76 | 1.22 (1.05-1.42) | 1.27 (1.09-1.49) | 1.27 (1.09-1.49) |
| Severe                      | 0.27                           | 1.33 (0.89-2.01) | 1.29 (0.79-2.10) | 1.29 (0.79-2.11) | 0.80 | 1.81 (1.41-2.32) | 1.60 (1.21-2.13) | 1.60 (1.21-2.13) |

**Preeclampsia with/without SGA**

|                             | Rate, per 10,000 person-years | Adjusted HR in the whole population (95% CI) | Adjusted HR in the restricted population (95% CI) | Adjusted HR in the restricted population (95% CI) |
|-----------------------------|--------------------------------|---------------------------------------------|--------------------------------------------|---------------------------------------------|
| Without SGA                | 0.35                           | 1.32 (1.06-1.64) | 1.40 (1.10-1.79) | 1.40 (1.10-1.79) | 0.69 | 1.25 (1.07-1.48) | 1.29 (1.09-1.54) | 1.29 (1.09-1.54) |
| With SGA                   | 0.42                           | 1.50 (1.03-2.18) | 1.81 (1.22-2.68) | 1.81 (1.22-2.68) | 0.93 | 1.84 (1.44-2.34) | 1.77 (1.36-2.31) | 1.77 (1.36-2.31) |

**Other hypertensive disorders during pregnancy**

|                             | Rate, per 10,000 person-years | Adjusted HR in the whole population (95% CI) | Adjusted HR in the restricted population (95% CI) | Adjusted HR in the restricted population (95% CI) |
|-----------------------------|--------------------------------|---------------------------------------------|--------------------------------------------|---------------------------------------------|
| Pre-existing chronic hypertension | 0.37                          | 1.72 (1.02-2.92) | 2.23 (1.20-4.16) | 2.27 (1.22-4.24) | 0.82 | 1.60 (1.12-2.30) | 1.72 (1.13-2.62) | 1.73 (1.14-2.63) |
| Gestational hypertension    | 0.44                           | 1.44 (1.12-1.84) | 1.44 (1.07-1.93) | 1.45 (1.08-1.94) | 0.86 | 1.40 (1.16-1.80) | 1.46 (1.18-1.80) | 1.46 (1.18-1.80) |

Abbreviations: SGA, small for gestational age (i.e., birth weight below the 10th percentile of the Swedish sex-specific standard curve for normal fetal growth); HR, hazard ratio; CI, confidence interval.
In the whole population, we adjusted for calendar year of birth, sex, maternal parity, age, education, marital status, and diabetes before childbirth.

In study participants with information on maternal family history of cardiovascular diseases, we adjusted for calendar year of birth, sex, maternal parity, age, education, marital status, and diabetes before childbirth.

In study participants with information on maternal family history of cardiovascular diseases, we further adjusted for family history of cardiovascular diseases.
eFigure. Cumulative incidence of A, ischemic heart disease, and B, stroke according to preeclampsia