Sup Fig 1 | Selection of twin pregnancies. Pregnancies were excluded if birth weight of two twins differed by more than 2 SD of all intra-twin differences in that gestational age window. Pregnancies with thus discordant twin birth weights (n=174) were excluded from analyses.

Sup Fig 2 | Classifying singleton births as small (SGA) or large (LGA) for gestational age using birth weight Z-score <-1.5 and >1.5, respectively. Birth weight Z-score was estimated from longitudinally derived intra-uterine growth curves in healthy term pregnancies using polynomial regression equation from Marsal et al.*, which takes into account child's sex, birth weight, and ultrasound-determined gestational age at birth.

* Marsal K, Persson PH, Larsen T, et al. Intrauterine growth curves based on ultrasonically estimated foetal weights. Acta Paediatr 1996;85(7):843-8. [published Online First: 1996/07/01].

“Uterine distention as a factor in birth timing: retrospective nationwide cohort study in Sweden”. Bacelis J. et al. 2018.
Sup Fig 3 | Sensitivity analysis with different SGA and LGA definitions. SGA and LGA are defined by birth weight Z-score in ranges (-2.0, -1.0] and (1.0, 2.0], respectively. Total number of observations is 133 196 (SGA=82 471, LGA=50 725). Panel A: general view of interaction pattern; Panel B: zoomed-in view; Panel C: regression coefficients, where MH is maternal height and “x” indicates interaction. BWzs is birth weight Z-score.
Supplementary File

“Uterine distention as a factor in birth timing: retrospective nationwide cohort study in Sweden”. Bacelis J. et al. 2018.

|          | Beta | SErr | Tval | Pval     |
|----------|------|------|------|----------|
| Intercept| 253.8| 0.429| 592  | <1E-150  |
| MH       | 0.157| 0.003| 61.3 | <1E-150  |
| BWzs     | -4.80| 0.491| -9.78| 1.4E-22  |
| MHxBWzs  | 0.024| 0.003| 8.28 | 1.3E-16  |

Sup Fig 4 | Sensitivity analysis with continuous uterine load variable. Only the appropriate for gestational age singletons were used, with birth weight Z-score in range (-2.0, 2.0]. In total, there were 508 442 observations. Panel A: results of regression analysis with interaction term; Panels B and C: intuitive aid for interpretation of regression coefficients (using categorized BWzs). MH is maternal height, BWzs is birth weight Z-score, and “x” indicates interaction.
### Sup Table 1 | Summary statistics of applied exclusions

This table supplements the flowchart in Figure 1, where it is equivalent to the block named “Excluded pregnancies”.

| order | exclusion-filter name                                                  | remaining rows | rows removed | fraction removed |
|-------|------------------------------------------------------------------------|----------------|--------------|-----------------|
| 1     | maternal ID is missing                                                 | 4185196        | 5304         | 0.13 %          |
| 2     | duplicated maternal ID - child ID combination                          | 4185184        | 12           | 0.0003 %        |
| 3     | mother born (or national) outside of 4 Nordic countries                | 3625825        | 559359       | 13 %            |
| 4     | missing, unreliable, <140 or >200 (cm) maternal height                | 2616038        | 1009787      | 27.8 %          |
| 5     | maternal BMI <15 or >45 (kg/m²)                                       | 2598666        | 17372        | 0.66 %          |
| 6     | stillbirth                                                             | 2587048        | 11618        | 0.45 %          |
| 7     | missing gestational age at birth data                                  | 2584054        | 2994         | 0.12 %          |
| 8     | less reliable gestational age evaluation method (LMP)                  | 1834910        | 749144       | 29.0 %          |
| 9     | induced (iatrogenic) delivery (or pregnancy before 1990)              | 1295490        | 539420       | 29.4 %          |
| 10    | prelabor rupture of membranes (PROM)                                  | 1276244        | 19246        | 1.49 %          |
| 11    | current Caesarean section                                              | 1273451        | 2793         | 0.22 %          |
| 12    | previous Caesarean section                                             | 1206658        | 66793        | 5.25 %          |
| 13    | self-reported maternal medical conditions                              | 1188517        | 18141        | 1.50 %          |
| 14    | pregnancy complications                                               | 1167804        | 20713        | 1.74 %          |
| 15    | collapse rows to pregnancies (affects twins, triplets etc.)            | 1160063        | 7741         | 0.66 %          |
| 16    | unclear twin/singleton assignment, triplets etc.                      | 1159635        | 428          | 0.037 %         |
| 17    | discordant maternal data in twin entries                              | 1159542        | 93           | 0.008 %         |
| 18    | birth weight is missing                                                | 1157760        | 1782         | 0.15 %          |
| 19    | not the first pregnancy                                                | 535300         | 622460       | 53.8 %          |
| 20    | maternal age <18 or >45                                               | 530888         | 4412         | 0.82 %          |

The authors would like to caution the reader in interpreting the “fraction removed” column: the applied filters overlap (i.e., are correlated), thus the fraction of removed pregnancies due to each filter is highly dependent on the order of applied filters and might not agree well with proportion of certain type of pregnancies estimated in other studies.