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## **Supplementary information**

### **Association between caesarean section delivery and obesity in childhood: a longitudinal cohort study in Ireland**

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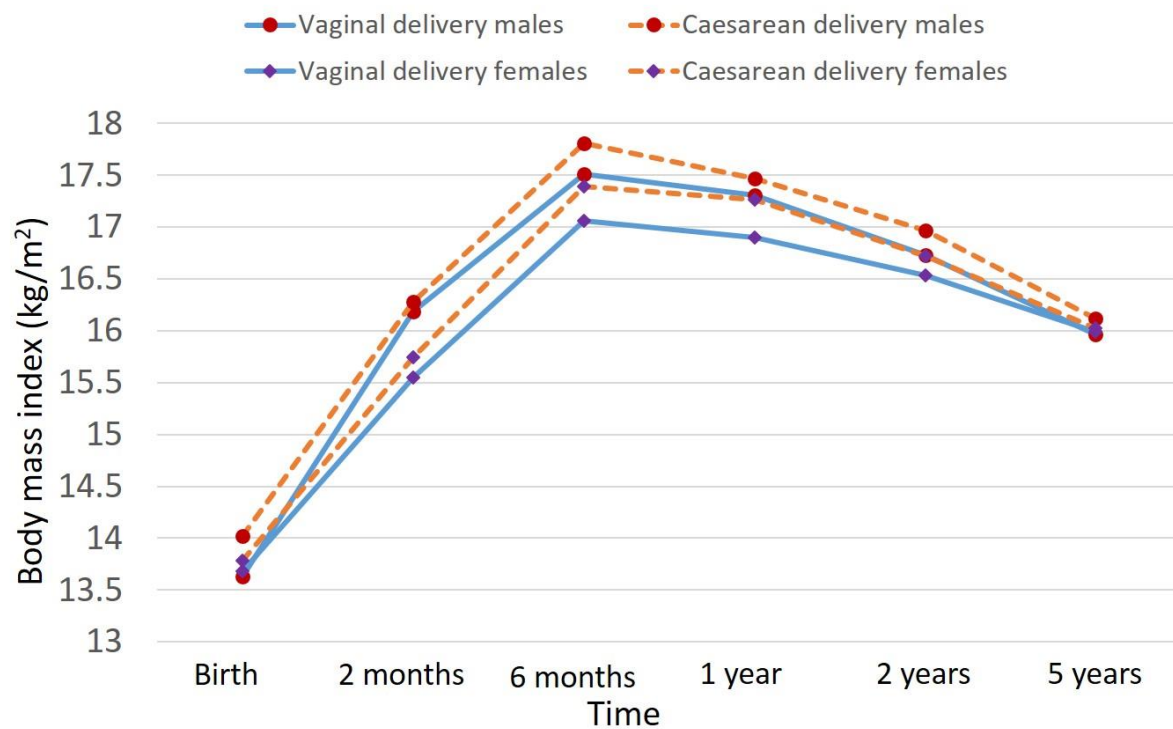
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**Supplementary Figure 1** Mean body mass index (BMI) from birth to 5 years of age by delivery mode and sex. Please note that the time axis has been expanded below age 1 year to allow clearer visualisation.

**Supplementary Table 1** Missing data for body fat % at age two months.

| Characteristic                                                                            | Body fat % data available<br>at age two months (n %)<br><br>n=1033 | Body fat % data missing<br>at two age months (n %)<br><br>n=272 | P value <sup>a</sup> |
|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------|----------------------|
| Maternal age (years),<br>median IQR                                                       | 31 (28-33)                                                         | 30 (28-33)                                                      | 0.6021               |
| Ethnicity <sup>b</sup>                                                                    |                                                                    |                                                                 | 0.558                |
| Caucasian                                                                                 | 1018 (98.5)                                                        | 269 (98.9)                                                      |                      |
| Other                                                                                     | 15 (1.5)                                                           | 3 (1.1)                                                         |                      |
| Schooling (years primary<br>and secondary), median<br>IQR                                 | 13 (13-14)                                                         | 13 (13-14)                                                      | 0.5227               |
| Marital status <sup>b</sup>                                                               |                                                                    |                                                                 | 0.879                |
| Single                                                                                    | 100 (9.7)                                                          | 23 (8.5)                                                        |                      |
| Married                                                                                   | 725 (70.2)                                                         | 195 (71.7)                                                      |                      |
| Stable<br>relationship not<br>married                                                     | 207 (20.0)                                                         | 54 (19.9)                                                       |                      |
| Sex of baby <sup>b</sup>                                                                  |                                                                    |                                                                 | 0.081                |
| Male                                                                                      | 540 (52.3)                                                         | 126 (46.3)                                                      |                      |
| Female                                                                                    | 493 (47.7)                                                         | 146 (53.7)                                                      |                      |
| Pre-eclampsia <sup>b</sup>                                                                | 40 (3.9)                                                           | 9 (3.3)                                                         | 0.664                |
| Maternal BMI at 15 weeks<br>(kg/m <sup>2</sup> ), median IQR                              | 24.1 (22.1-26.9)                                                   | 23.7 (22.0-26.7)                                                | 0.2455               |
| Gestational age (weeks),<br>median IQR                                                    | 40 (39-41)                                                         | 40 (39-41)                                                      | 0.4624               |
| Number of cigarettes per<br>day at 15 weeks SCOPE<br>visit, mean ( $\pm$ SD) <sup>c</sup> | 0.5 ( $\pm$ 2.2)                                                   | 0.4 ( $\pm$ 2.0)                                                | 0.2517               |
| Birth weight (g), median<br>IQR                                                           | 3460 (3150-3770)                                                   | 3475 (3160-3750)                                                | 0.9099               |

IQR – Interquartile range, BMI – Body mass index, SD – standard deviation, SCOPE – Screening for pregnancy endpoints.

<sup>a</sup> Mann-Whitney test<sup>b</sup> Pearson's  $\chi^2$  test or Fisher's exact<sup>c</sup> Two-sample t test

**Supplementary Table 2** Mode of delivery and body mass index at age two years. Non-marosomic.

| BMI category (normal BMI – base outcome) | RRR (95% CI)     | P value | AdjRRR (95% CI)** | P value |
|------------------------------------------|------------------|---------|-------------------|---------|
| Thin                                     |                  |         |                   |         |
| Unassisted vaginal                       | Reference        |         | Reference         |         |
| Operative vaginal                        | 1.41 (0.84-2.36) | 0.188   | 1.51 (0.89-2.58)  | 0.130   |
| Prelabour LSCS                           | 0.26 (0.24-1.62) | 0.357   | 0.67 (0.27-1.68)  | 0.398   |
| LSCS in labour                           | 0.73 (0.32-1.64) | 0.443   | 0.83 (0.37-1.90)  | 0.664   |
| Overweight or obese                      |                  |         |                   |         |
| Unassisted vaginal                       | Reference        |         | Reference         |         |
| Operative vaginal                        | 0.98 (0.58-1.64) | 0.929   | 0.93 (0.54-1.59)  | 0.789   |
| Prelabour LSCS                           | 0.93 (0.44-1.95) | 0.842   | 0.95 (0.44-2.05)  | 0.891   |
| LSCS in labour                           | 1.01 (0.51-1.98) | 0.982   | 0.89 (0.44-1.82)  | 0.747   |

N for adjusted model = 921. Multinomial logistic regression. BMI – Body mass index, RRR (Relative Risk Ratio), CI (Confidence intervals), Adj (Adjusted).

\*\*Adjusted for maternal age, education, ethnicity, marital status, infant sex, maternal smoking during pregnancy, maternal BMI at the first antenatal visit, gestational age (at delivery), birth weight and pre-eclampsia

**Supplementary Table 3** Mode of delivery and body mass index at age five years. Non-macrosomic.

| BMI category (normal BMI – base outcome) | RRR (95% CI)     | P value | AdjRRR (95% CI)** | P value |
|------------------------------------------|------------------|---------|-------------------|---------|
| Thin                                     |                  |         |                   |         |
| Unassisted vaginal                       | Reference        |         | Reference         |         |
| Operative vaginal                        | 1.59 (0.76-3.32) | 0.221   | 1.85 (0.85-4.04)  | 0.120   |
| Prelabour LSCS                           | 0.73 (0.20-2.63) | 0.629   | 0.46 (0.14-1.55)  | 0.209   |
| LSCS in labour                           | 1.09 (0.38-3.14) | 0.880   | 1.14 (0.39-3.34)  | 0.815   |
| Overweight or obese                      |                  |         |                   |         |
| Unassisted vaginal                       | Reference        |         | Reference         |         |
| Operative vaginal                        | 1.43 (0.87-2.36) | 0.161   | 1.77 (1.03-3.04)  | 0.038   |
| Prelabour LSCS                           | 0.89 (0.41-1.95) | 0.768   | 0.86 (0.36-2.08)  | 0.750   |
| LSCS in labour                           | 1.59 (0.85-2.98) | 0.150   | 2.37 (1.19-4.68)  | 0.014   |

N for adjusted model = 741. Multinomial logistic regression. BMI – Body mass index, RRR (Relative Risk Ratio), CI (Confidence intervals), Adj (Adjusted).

\*\*Adjusted for maternal age, education, ethnicity, marital status, infant sex, maternal smoking during pregnancy, maternal BMI at the first antenatal visit, gestational age (at delivery), birth weight and pre-eclampsia