Supplementary Tables:

**Background:**

Our primary analysis only focused on infants that were either exclusively breastfed or formula-fed throughout the first two months of life. We excluded any mixed feeders (those that received both breastmilk and infant formula during the first two months of life) from the original analysis because:

* We did not collect information on duration of exclusive breastfeeding. So we do not know, and are therefore unable to control for, duration of exclusive breastfeeding for those that were introduced to infant formula either in addition to continuing to receive breastmilk or stopped receiving any breastmilk altogether.
* We are also unable to tell how many infants were originally exclusively breastfed, introduced to infant formula in addition to receiving breastmilk and by two months were then exclusively fed infant formula.
* The data we collected on breastfeeding duration was when the infant was last ever breastfed.
* For those that received both breastmilk and infant formula we do not know how many feeds of breastmilk and infant formula per day, during the two month period, were given to the infants. Therefore, some mixed feeders may have only received one bottle of infant formula per day and others may have received only one breastfed a day

All these points should be taken into consideration when reading the supplementary tables.

**Methods:**

As with the primary analysis we categorized infants based on medical reports from the maternity hospital, and parental reports of infant feeding at two months of age. Infants that received both breastmilk and infant formula were categorized as ‘mixed feeders’. Infants were grouped as mixed-fed (both breastmilk and infant formula) from birth, mixed-fed by two months of age (independent of how they were fed in the maternity hospital) and formula-fed by two months of age (independent if were mixed feeders or exclusively breastfed in the maternity hospital).

Categorical variables were reported as absolute numbers and as percentages. Associations between categorical variables were examined using Pearson’s chi-square test. Continuous variables were described by their mean and standard deviation (SD); and differences between the feeding groups were tested using one-way analysis of variance (ANOVA) with Tukey post hoc test. The exclusively breastfed group (as reported in the main text) is the reference group for all analysis. The multivariable analysis was undertaken using linear regression and all estimates are reported alongside 95% confidence intervals. For the multivariable analysis we included the same variables from the primary analysis presented in the main paper.

**Table 1: Study Sample Characteristics for All Participants**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Exclusively  Breastfed | Mixed-fed from birth | Mixed-fed by two  months | Formula-fed by two months | P-Value  (Breastfed versus Mixed-fed from birth) | P-Value  (Breastfed versus  Mixed-fed by two months) | P-Value  (Breastfed versus  Formula-fed by two months) |
| *Sample Size* | *117 (100%)* | *386 (100%)* | *207 (100%)* | *39 (100%)* | *N/A* | *N/A* | *N/A* |
| Maternal BMI at 15 weeks’ gestation | 23.29 (3.12) | 25.11 (4.14) | 24.38 (3.52) | 26.68 (6.05) | <0.001 | 0.08 | <0.001 |
| Maternal weight gain exceeded IOM recommendations: Yes | 34 (35.8%) | 115 (42.8%) | 57 (38.3%) | 11 (37.9%) | 0.27 | 0.76 | 0.88 |
| Maternal Tertiary Education: Yes | 80 (68.4%) | 229 (59.3%) | 129 (62.3%) | 16 (41.0%) | 0.07 | 0.25 | 0.002 |
| Maternal employment: Yes | 102 (87.2%) | 357 (92.5%) | 182 (87.9%) | 33 (84.6%) | 0.04 | 0.70 | 0.78 |
| Biparietal diameter (mm) from fetal growth scan | 48.95 (3.21) | 49.50 (2.87) | 49.10 (2.85) | 49.79 (3.29) | 0.31 | 0.97 | 0.43 |
| Head circumference (mm) from fetal growth scan | 182.51 (10.63) | 185.17 (9.70) | 183.79 (9.68) | 185.03 (11.65) | 0.06 | 0.69 | 0.53 |
| Abdominal circumference (mm) from fetal growth scan | 157.30 (9.67) | 159.77 (9.97) | 158.98 (9.74) | 161.05 (11.95) | 0.11 | 0.53 | 0.20 |
| Femur length (mm) from fetal growth scan | 33.43 (2.50) | 34.04 (2.63) | 33.86 (2.44) | 34.23 (2.53) | 0.13 | 0.51 | 0.35 |
| Gestational age (weeks) at delivery | 39.65 (1.13) | 39.75 (1.15) | 39.83 (1.17) | 39.69 (1.26) | 0.25 | 0.70 | 0.54 |
| Infant birthweight (kg) | 3.56 (0.42) | 3.55 (0.49) | 3.52 (0.40) | 3.60 (0.51) | 1.00 | 0.83 | 0.98 |
| Infant length (cm) | 50.60 (1.89) | 50.57 (2.09) | 50.37 (1.85) | 50.84 (2.08) | 1.00 | 0.77 | 0.91 |
| Infant fat mass (kg) | 0.34 (0.14) | 0.38 (0.18) | 0.36 (0.15) | 0.43 (0.18) | 0.10 | 0.54 | 0.02 |
| Infant fat mass (%) | 10.01 (3.71) | 10.98 (4.16) | 10.82 (3.95) | 12.10 (3.91) | 0.11 | 0.34 | 0.03 |
| Infant fat free mass (kg) | 2.99 (0.35) | 2.97 (0.35) | 2.95 (0.31) | 2.96 (0.53) | 0.88 | 0.61 | 0.93 |

**Table 2: Study Sample Characteristics for Male Participants**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Breastfed | Mixed-fed from birth | Mixed-fed by two months | Formula-fed by two months | P-Value  (Breastfed versus Mixed-fed from birth) | P-Value  (Breastfed versus  Mixed-fed by two months) | P-Value  (Breastfed versus  Formula-fed by two months) |
| *Sample Size* | *54 (100%)* | *199 (100%)* | *99 (100%)* | *20 (100%)* | *N/A* | *N/A* | *N/A* |
| Maternal BMI at 15 weeks’ gestation | 23.22 (2.68) | 25.04 (3.99) | 24.72 (3.52) | 25.92 (6.45) | 0.01 | 0.11 | 0.04 |
| Maternal weight gain exceeded IOM recommendations: Yes | 14 (33.3%) | 59 (42.4%) | 27 (39.7%) | 6 (33.3%) | 0.25 | 0.45 | 0.95 |
| Maternal Tertiary Education: Yes | 34 (63.0%) | 125 (62.8%) | 65 (65.7%) | 8 (40.0%) | 0.98 | 0.74 | 0.08 |
| Maternal employment: Yes | 47 (87.0%) | 184 (92.5%) | 87 (87.9%) | 18 (90.0%) | 0.21 | 0.88 | 0.73 |
| Biparietal diameter (mm) from fetal growth scan | 50.24 (3.22) | 50.08 (2.82) | 49.49 (2.90) | 49.74 (3.40) | 0.98 | 0.44 | 0.92 |
| Head circumference (mm) from fetal growth scan | 186.06 (10.71) | 186.81 (9.56) | 184.77 (9.96) | 184.95 (9.96) | 0.96 | 0.88 | 0.98 |
| Abdominal circumference (mm) from fetal growth scan | 159.31 (10.03) | 160.87 (9.65) | 159.44 (10.05) | 161.10 (14.04) | 0.75 | 1.00 | 0.91 |
| Femur length (mm) from fetal growth scan | 33.85 (2.54) | 33.99 (2.62) | 33.58 (2.46) | 33.50 (2.14) | 0.99 | 0.93 | 0.95 |
| Gestational age (weeks) at delivery | 40.11 (1.02) | 39.69 (1.19) | 39.72 (1.22) | 39.90 (1.17) | 0.10 | 0.20 | 0.90 |
| Infant birthweight (kg) | 3.62 (0.48) | 3.53 (0.48) | 3.55 (0.41) | 3.57 (0.53) | 0.99 | 0.81 | 0.97 |
| Infant length (cm) | 50.96 (2.05) | 50.85 (2.01) | 50.57 (2.01) | 51.08 (2.17) | 0.98 | 0.66 | 1.00 |
| Infant fat mass (kg) | 0.30 (0.14) | 0.35 (0.17) | 0.33 (0.15) | 0.41 (0.17) | 0.09 | 0.68 | 0.04 |
| Infant fat mass (%) | 8.60 (3.46) | 10.15 (3.78) | 9.59 (3.66) | 11.59 (3.57) | 0.04 | 0.42 | 0.01 |
| Infant fat free mass (kg) | 3.08 (0.39) | 3.03 (0.35) | 3.00 (0.30) | 3.02 (0.39) | 0.75 | 0.53 | 0.90 |

**Table 3: Study Sample Characteristics for Female Participants**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Breastfed | Mixed-fed from birth | Mixed-fed by two months of age | Formula-fed by two months of age | P-Value  (Breastfed versus Mixed-fed from birth) | P-Value  (Breastfed versus  Mixed-fed by two months) | P-Value  (Breastfed versus  Formula-fed by two months) |
| *Sample Size* | *63 (100%)* | *187 (100%)* | *108 (100%)* | *19 (100%)* | *N/A* | *N/A* | *N/A* |
| Maternal BMI at 15 weeks’ gestation | 23.36  (3.48) | 25.19  (4.30) | 24.07  (3.50) | 27.47  (5.67) | 0.01 | 0.68 | 0.001 |
| Maternal weight gain exceeded IOM recommendations | 20  (37.7%) | 56  (43.1%) | 30  (37.0%) | 5  (45.5%) | 0.63 | 0.79 | 0.70 |
| Maternal Tertiary Education: Yes | 46  (73.0%) | 104  (55.6%) | 64  (59.3%) | 8  (42.1%) | 0.01 | 0.06 | 0.01 |
| Maternal employment: Yes | 55  (87.3%) | 173  (92.5%) | 95  (88.0%) | 15  (78.9%) | 0.12 | 0.70 | 0.46 |
| Biparietal diameter (mm) from fetal growth scan | 47.80  (2.74) | 48.88  (2.80) | 48.75  (2.77) | 49.84  (3.27) | 0.06 | 0.18 | 0.03 |
| Head circumference (mm) from fetal growth scan | 179.38  (9.59) | 183.41 (9.57) | 182.90 (9.38) | 185.11  (9.91) | 0.03 | 0.11 | 0.11 |
| Abdominal circumference (mm) from fetal growth scan | 155.55  (9.06) | 158.62 (10.20) | 158.56  (9.49) | 161.00  (9.67) | 0.20 | 0.28 | 0.18 |
| Femur length (mm) from fetal growth scan at | 33.06  (2.43) | 34.10  (2.64) | 34.11  (2.40) | 35.00  (2.73) | 0.04 | 0.07 | 0.03 |
| Gestational age (weeks) at delivery | 39.58  (1.10) | 39.81  (1.10) | 39.94  (1.11) | 39.47  (1.35) | 0.99 | 0.97 | 0.55 |
| Infant birthweight (kg) | 3.51  (0.36) | 3.50  (0.50) | 3.49  (0.39) | 3.63  (0.48) | 1.00 | 0.99 | 0.78 |
| Infant length (cm) | 50.28  (1.69) | 50.27  (2.13) | 50.19  (1.69) | 50.58  (2.00) | 1.00 | 0.99 | 0.93 |
| Infant fat mass (kg) | 0.37  (0.14) | 0.41  (0.19) | 0.40  (0.15) | 0.45  (0.19) | 0.57 | 0.79 | 0.33 |
| Infant fat mass (%) | 11.21  (3.50) | 11.88  (4.38) | 11.95  (3.89) | 12.64  (4.27) | 0.69 | 0.68 | 0.55 |
| Infant fat free mass (kg) | 2.92  (0.29) | 2.91  (0.34) | 2.90  (0.30) | 2.89  (0.65) | 0.98 | 0.95 | 0.99 |

**Table 4a: Multiple Linear Regression For Neonatal %FM**

|  |  |  |
| --- | --- | --- |
|  | β (95% CI) | P-Value |
| ALL infants | | |
| (Constant) | -9.32 (-21.51, 2.86) | 0.13 |
| Female Infant (versus male infant) | 1.90 (1.21, 2.58) | <0.001 |
| Exclusively Breastfed (versus mixed-fed from birth) | -1.14 (-1.97, -0.31) | 0.007 |
| Gestational weeks at delivery | 0.48 (0.18, 0.79) | 0.002 |
| Maternal occupation is manager/professional | -0.33 (-1.01, 0.36) | 0.35 |
| Maternal BMI at 15 weeks’ gestation | 0.02 (-0.73, 0.10) | 0.74 |
| MALE infants | | |
| Constant | 1.33 (-14.64, 17.30) | 0.87 |
| Exclusively Breastfed (versus mixed-fed from birth) | -1.60 (-2.75, -0.44) | 0.007 |
| Gestational weeks at delivery | 0.22 (-0.18, 0.62) | 0.28 |
| Maternal occupation is manager/professional | -0.43 (-1.35, 0.49) | 0.36 |
| Maternal BMI at 15 weeks’ gestation | 0.01 (-0.11, 0.14) | 0.83 |
| FEMALE infants | | |
| Constant | -20.76 (-39.49, -2.04) | 0.03 |
| Exclusively Breastfed (versus mixed-fed from birth) | -0.67 (-1.86, 0.52) | 0.27 |
| Gestational weeks at delivery | 0.82 (0.34, 1.29) | 0.001 |
| Maternal occupation is manager/professional | -0.21 (-1.23, 0.82) | 0.69 |
| Maternal BMI at 15 weeks’ gestation | 0.01 (-0.12, 0.14) | 0.87 |

**Table 4b: Multiple Linear Regression For Neonatal %FM**

|  |  |  |
| --- | --- | --- |
|  | β (95% CI) | P-Value |
| ALL infants | | |
| (Constant) | 5.11 (-9.27, 19.48) | 0.49 |
| Female Infant (versus male infant) | 2.43 (1.63, 3.24) | <0.001 |
| Exclusively Breastfed (versus mixed-fed by two months old) | -0.87 (-1.71, -0.02) | 0.04 |
| Gestational weeks at delivery | 0.10 (-0.26, 0.46) | 0.59 |
| Maternal occupation is manager/professional | -0.34 (-1.15, 0.47) | 0.41 |
| Maternal BMI at 15 weeks’ gestation | -0.009 (-0.13, 0.11) | 0.88 |
| MALE infants | | |
| Constant | 4.96 (-15.06, 24.97) | 0.63 |
| Exclusively Breastfed (versus mixed-fed by two months old) | -1.10 (-2.34, 0.14) | 0.08 |
| Gestational weeks at delivery | 0.16 (-0.34, 0.66) | 0.53 |
| Maternal occupation is manager/professional | -1.11 (-2.25, 0.04) | 0.06 |
| Maternal BMI at 15 weeks’ gestation | -0.04 (-0.22, 0.13) | 0.63 |
| FEMALE infants | | |
| Constant | 9.62 (-11.29, 30.52) | 0.37 |
| Exclusively Breastfed (versus mixed-fed by two months old) | -0.68 (-1.87, 0.50) | 0.26 |
| Gestational weeks at delivery | 0.04 (-0.49, 0.58) | 0.87 |
| Maternal occupation is manager/professional | 0.34 (-0.81, 1.49) | 0.56 |
| Maternal BMI at 15 weeks’ gestation | 0.02 (-0.15, 0.18) | 0.84 |

**Table 4c: Multiple Linear Regression For Neonatal %FM**

|  |  |  |
| --- | --- | --- |
|  | β (95% CI) | P-Value |
| ALL infants | | |
| (Constant) | 15.78 (-5.02, 36.58) | 0.14 |
| Female Infant (versus male infant) | 2.20 (1.05, 3.35) | <0.001 |
| Exclusively Breastfed (versus formula-fed by two months old) | -2.18 (-3.60, -0.76) | 0.003 |
| Gestational weeks at delivery | -0.10 (-0.63, 0.44) | 0.73 |
| Maternal occupation is manager/professional | -0.67 (-1.82, 0.48) | 0.25 |
| Maternal BMI at 15 weeks’ gestation | -0.03 (-0.17, 0.12) | 0.70 |
| MALE infants | | |
| Constant | 17.15 (-13.58, 47.89) | 0.27 |
| Exclusively Breastfed (versus formula-fed by two months old) | -2.65 (-4.57, -0.74) | 0.007 |
| Gestational weeks at delivery | -0.15 (-0.94, 0.64) | 0.71 |
| Maternal occupation is manager/professional | -1.26 (-2.89, 0.38) | 0.13 |
| Maternal BMI at 15 weeks’ gestation | 0.03 (-0.18, 0.24) | 0.76 |
| FEMALE infants | | |
| Constant | 17.66 (-11.12, 46.45) | 0.23 |
| Exclusively Breastfed (versus formula-fed by two months old) | -1.59 (-3.74, 0.57) | 0.15 |
| Gestational weeks at delivery | -0.09 (-0.83, 0.65) | 0.81 |
| Maternal occupation is manager/professional | -0.15 (-1.82, 1.51) | 0.86 |
| Maternal BMI at 15 weeks’ gestation | -0.05 (-0.26, 0.16) | 0.61 |