**Supplementary Table 1**: Inter-observer reliability of anthropometric measurements

|  |  |  |  |
| --- | --- | --- | --- |
|  | **TE** |  | **CV (%)** |
| **Weight (kg)** | 0.09 |  | 0.19 |
| **Height (cm)** | 0.26 |  | 0.16 |
| **Triceps skinfolds (mm)** | 0.80 |  | 6.00 |
| **Subscapular skinfolds (mm)** | 0.83 |  | 4.18 |
| **Abdominal circumference (cm)** | 0.30 |  | 0.50 |

TE: Technical error of measurement; CV: coefficient of variation

**Supplementary Table 2**: Technical error of measurement and coefficient of variation of anthropometric measures at earlier ages (≤ 24-months)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Anthropometric measure** | **Birth** | |  | **Month 3** | |  | **Month 12** | |  | **Month 18** | |  | **Month 24** | |
| **CV** | **TE** |  | **CV** | **TE** |  | **CV** | **TE** |  | **CV** | **TE** |  | **CV** | **TE** |
| **Weight (kg)** | 0.09% | 0.07 |  | 0.07% | 0.06 |  | 0.05% | 0.03 |  | 0.43% | 0.01 |  | 0.40% | 0.01 |
| **Recumbent length (cm)** | 0.15% | 0.02 |  | 0.11% | 0.02 |  | 0.06% | 0.03 |  | 0.06% | 0.01 |  | 0.04% | 0.01 |
| **Standing Height (cm)** | - | - |  | - | - |  | - | - |  | - | - |  | 0.06% | 0.01 |
| **Abdominal Circumference (cm)** | 0.36% | 0.04 |  | 0.20% | 0.02 |  | 0.23% | 0.01 |  | 0.14% | 0.01 |  | 0.12% | 0.01 |
| **Triceps skinfolds (mm)** | 2.05% | 0.04 |  | - | - |  | - | - |  | 1.50% | 0.04 |  | 1.51% | 0.04 |
| **Subscapular skinfolds (mm)** | 2.19% | 0.03 |  | - | - |  | - | - |  | 1.68% | 0.03 |  | 1.74% | 0.03 |

TE: Technical error of measurement; CV: coefficient of variation

**Supplementary Table 3**: Correlation matrix between height, body mass index (BMI), abdominal circumference (AC), triceps and subscapular skinfold gain velocities, and height at 48 months

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Height gain velocities** | | | | |  | **BMI gain velocities** | | | | |  | **AC gain velocities** | | | | |  | **Triceps skinfold velocities** | | |  | **Subscapular skinfold velocities** | | | |
|  |  | 0 to 3 | 3 to 12 | 12 to 24 | 24 to 36 | 36 to 48 |  | 0 to 3 | 3 to 12 | 12 to 24 | 24 to 36 | 36 to 48 |  | 0 to 3 | 3 to 12 | 12 to 24 | 24 to 36 | 36 to 48 |  | 0 to 18 | 18 to 36 | 36 to 48 |  | 0 to 18 | 18 to 36 | 36 to 48 |
| **Height  gain  velocities** | 0 to 3 | 1.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 to 12 | -0.18 | 1.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 to 24 | -0.08 | -0.24 | 1.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 to 36 | 0.06 | 0.05 | -0.16 | 1.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 to 48 | 0.02 | 0.09 | 0.16 | 0.06 | 1.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **BMI  gain  velocities** | 0 to 3 | -0.25 | 0.23 | 0.04 | -0.04 | 0.00 |  | 1.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 to 12 | 0.13 | -0.32 | 0.30 | 0.03 | 0.08 |  | -0.48 | 1.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 to 24 | 0.00 | 0.28 | -0.44 | 0.23 | 0.02 |  | -0.10 | -0.29 | 1.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 24 to 36 | 0.03 | 0.02 | 0.20 | -0.14 | 0.29 |  | -0.09 | 0.09 | -0.18 | 1.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 36 to 48 | -0.01 | 0.07 | 0.06 | 0.06 | 0.01 |  | -0.02 | -0.04 | 0.06 | -0.21 | 1.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **AC gain  velocities** | 0 to 3 | 0.21 | 0.03 | 0.05 | -0.05 | 0.03 |  | 0.50 | -0.23 | -0.12 | 0.00 | -0.03 |  | 1.00 |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 to 12 | -0.05 | 0.23 | 0.06 | 0.06 | 0.07 |  | -0.06 | 0.32 | 0.00 | 0.02 | 0.02 |  | -0.34 | 1.00 |  |  |  |  |  |  |  |  |  |  |  |
| 12 to 24 | -0.05 | -0.01 | 0.09 | 0.05 | 0.04 |  | -0.12 | 0.05 | 0.35 | 0.03 | 0.03 |  | -0.12 | -0.38 | 1.00 |  |  |  |  |  |  |  |  |  |  |
| 24 to 36 | -0.01 | 0.05 | 0.01 | 0.25 | 0.21 |  | -0.07 | 0.08 | 0.05 | 0.56 | -0.05 |  | -0.07 | 0.06 | -0.22 | 1.00 |  |  |  |  |  |  |  |  |  |
| 36 to 48 | 0.00 | 0.08 | 0.09 | 0.06 | 0.21 |  | 0.01 | 0.03 | 0.04 | -0.05 | 0.66 |  | -0.01 | 0.04 | 0.05 | -0.17 | 1.00 |  |  |  |  |  |  |  |  |
| **Triceps  skinfold  velocities** | 0 to 18 | 0.00 | 0.09 | 0.06 | -0.01 | 0.09 |  | 0.27 | 0.17 | -0.02 | 0.03 | 0.05 |  | 0.15 | 0.17 | 0.01 | 0.01 | 0.09 |  | 1.00 |  |  |  |  |  |  |
| 18 to 36 | 0.00 | 0.01 | 0.04 | 0.12 | 0.14 |  | -0.04 | 0.09 | 0.05 | 0.39 | -0.12 |  | 0.00 | 0.08 | 0.10 | 0.29 | -0.05 |  | -0.20 | 1.00 |  |  |  |  |  |
| 36 to 48 | -0.01 | 0.08 | 0.03 | 0.09 | 0.21 |  | 0.01 | 0.00 | 0.12 | -0.04 | 0.58 |  | -0.02 | 0.10 | 0.01 | 0.04 | 0.48 |  | 0.07 | -0.33 | 1.00 |  |  |  |  |
| **Subscapular  skinfold  velocities** | 0 to 18 | 0.06 | 0.19 | 0.02 | 0.01 | 0.10 |  | 0.35 | 0.10 | 0.08 | 0.06 | -0.05 |  | 0.28 | 0.22 | 0.07 | 0.03 | 0.04 |  | 0.61 | 0.04 | 0.03 |  | 1.00 |  |  |
| 18 to 36 | -0.03 | 0.02 | 0.03 | 0.19 | 0.21 |  | -0.05 | 0.10 | 0.12 | 0.55 | -0.05 |  | -0.03 | 0.06 | 0.14 | 0.45 | -0.01 |  | -0.02 | 0.51 | -0.01 |  | -0.11 | 1.00 |  |
| 36 to 48 | 0.02 | 0.09 | 0.08 | 0.07 | 0.23 |  | -0.09 | 0.11 | 0.08 | -0.01 | 0.62 |  | -0.06 | 0.11 | 0.06 | 0.05 | 0.57 |  | 0.12 | -0.06 | 0.60 |  | 0.08 | -0.17 | 1.00 |
|  | Month 48  Height | 0.28 | 0.38 | 0.34 | 0.30 | 0.46 |  | 0.05 | 0.05 | 0.02 | 0.15 | 0.07 |  | 0.14 | 0.16 | 0.05 | 0.18 | 0.17 |  | 0.10 | 0.14 | 0.16 |  | 0.14 | 0.15 | 0.19 |

**Supplementary Table 4**: Comparison of characteristics between subjects with and without BP measurements

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | | **No child BP data n = 451** |  | **Have child BP n = 719** |  | **p value** |
| **Maternal characteristics** | |  |  |  |  |  |
| **Age (years)** | | 30.1 ± 5.1 |  | 31.0 ± 5.1 |  | **0.003** |
| **Education level** | |  |  |  |  | 0.135 |
|  | < 12 years | 190 (43.2%) |  | 277 (38.7%) |  |  |
|  | ≥ 12 years | 250 (56.8%) |  | 438 (61.3%) |  |  |
| **Ethnicity** | |  |  |  |  | 0.864 |
|  | Chinese | 253 (56.1%) |  | 406 (56.5%) |  |  |
|  | Malay | 113 (25.1%) |  | 186 (25.9%) |  |  |
|  | Indian | 85 (18.8%) |  | 127 (17.7%) |  |  |
| **Parity** | |  |  |  |  | 0.388 |
|  | Primiparous | 213 (47.2%) |  | 321 (44.6%) |  |  |
|  | Multiparous | 238 (52.8%) |  | 398 (55.4%) |  |  |
| **Anthropometry** | |  |  |  |  |  |
|  | Height (cm) | 158.5 ± 5.6 |  | 158.2 ± 5.7 |  | 0.388 |
|  | BMI (kg/m2) | 26.1 ± 4.5 |  | 26.3 ± 4.5 |  | 0.579 |
| **Blood pressure** | |  |  |  |  |  |
|  | SBP (mmHg) | 110.6 ± 11.6 |  | 109.6 ± 13.0 |  | 0.620 |
|  | DBP (mmHg) | 66.7 ± 9.4 |  | 66.5 ± 9.4 |  | 0.872 |
| **Child characteristics** | |  |  |  |  |  |
| **Gender** | |  |  |  |  | 0.058 |
|  | Male | 197 (43.7%) |  | 355 (49.4%) |  |  |
|  | Female | 254 (56.3%) |  | 364 (50.6%) |  |  |
| **Gestational age at delivery (weeks)** | | 38.2 ± 1.6 |  | 38.3 ± 1.5 |  | 0.456 |
| **Birth anthropometry** | |  |  |  |  |  |
|  | Weight (kg) | 3.1 ± 0.5 |  | 3.1 ± 0.4 |  | 0.104 |
|  | Height (cm) | 48.4 ± 2.3 |  | 48.7 ± 2.3 |  | **0.021** |
|  | Abdominal circumference (cm) | 28.4 ± 2.6 |  | 28.4 ± 2.3 |  | 0.782 |
|  | Triceps skinfolds (mm) | 5.3 ± 1.2 |  | 5.5 ± 1.2 |  | 0.077 |
|  | Subscapular skinfolds (mm) | 4.9 ± 1.3 |  | 4.9 ± 1.1 |  | 0.889 |

**Supplementary Table 5:** Growth velocities across early infancy (0-3 months), late infancy (3-12 months), early toddlerhood (12-24 months), late toddlerhood (24-36 months) and preschool (36-48 months) in the GUSTO cohort

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Growth velocities** | | **n** |  | **Mean ± SD** |
| **Height (cm/month)** | |  |  |  |
|  | 0 to 3 months | 678 |  | 3.9 ± 0.8 |
|  | 3 to 12 months | 636 |  | 1.6 ± 0.2 |
|  | 12 to 24 months | 561 |  | 1.0 ± 0.2 |
|  | 24 to 36 months | 581 |  | 0.3 ± 0.1 |
|  | 36 to 48 months | 697 |  | 0.6 ± 0.1 |
| **Body Mass Index (kg/m2/month)** | |  |  |  |
|  | 0 to 3 months | 678 |  | 1.1 ± 0.6 |
|  | 3 to 12 months | 636 |  | -0.001 ± 0.2 |
|  | 12 to 24 months | 561 |  | -0.07 ± 0.09 |
|  | 24 to 36 months | 581 |  | 0.02 ± 0.09 |
|  | 36 to 48 months | 697 |  | -0.02 ± 0.08 |
| **Abdominal Circumference (cm/month)** | |  |  |  |
|  | 0 to 3 months | 645 |  | 3.5 ± 1.1 |
|  | 3 to 12 months | 635 |  | 0.4 ± 0.3 |
|  | 12 to 24 months | 612 |  | 0.3 ± 0.2 |
|  | 24 to 36 months | 635 |  | 0.1 ± 0.1 |
|  | 36 to 48 months | 697 |  | 0.1 ± 0.2 |
| **Triceps skinfolds (mm/month)** | |  |  |  |
|  | 0 -18 months | 568 |  | 0.2 ± 0.1 |
|  | 18- 36 months | 567 |  | 0.04 ± 0.1 |
|  | 36-48 months | 667 |  | 0.0009 ± 0.006 |
| **Subscapular skinfolds (mm/month)** | |  |  |  |
|  | 0 -18 months | 537 |  | 0.07 ± 0.08 |
|  | 18- 36 months | 534 |  | 0.01 ± 0.09 |
|  | 36-48 months | 667 |  | 0.0004 ± 0.005 |

**Supplementary Table 6:** Associations between height, BMI, abdominal circumference, triceps and subscapular skinfold z-score velocities with systolic and diastolic blood pressure at age 48 months.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Systolic Blood Pressure** | | | |  | **Diastolic Blood Pressure** | | | |
|  |  | **B** | **95% CI** | | **p value** |  | **B** | **95% CI** | | **p value** |
|  |  | **low** | **high** |  | **low** | **high** |
| **Height z-score velocity1,3** | |  |  |  |  |  |  |  |  |  |
|  | 0 to 3 months | 3.17 | -0.83 | 7.16 | 0.12 |  | 1.05 | -1.41 | 3.50 | 0.40 |
|  | 3 to 12 months | 0.58 | -0.15 | 1.31 | 0.12 |  | 0.00 | -0.44 | 0.44 | 0.99 |
|  | 12 to 24 months | 0.17 | -0.69 | 1.02 | 0.70 |  | -0.22 | -0.72 | 0.28 | 0.40 |
|  | 24 to 36 months | 0.85 | -0.04 | 1.73 | 0.06 |  | ***0.55*** | ***0.03*** | ***1.07*** | ***0.04*** |
|  | 36 to 48 months | 0.35 | -0.37 | 1.08 | 0.34 |  | ***0.43*** | ***0.01*** | ***0.86*** | ***0.04*** |
| **BMI z-score velocity2,3,4** | |  |  |  |  |  |  |  |  |  |
|  | 0 to 3 months | -0.32 | -1.06 | 0.41 | 0.39 |  | -0.23 | -0.69 | 0.22 | 0.31 |
|  | 3 to 12 months | 0.46 | -0.32 | 1.24 | 0.25 |  | 0.23 | -0.25 | 0.70 | 0.35 |
|  | 12 to 24 months | 0.66 | -0.18 | 1.51 | 0.13 |  | 0.37 | -0.13 | 0.87 | 0.15 |
|  | 24 to 36 months | 0.44 | -0.36 | 1.24 | 0.28 |  | 0.38 | -0.09 | 0.86 | 0.12 |
|  | 36 to 48 months | ***2.44*** | ***1.66*** | ***3.23*** | ***<0.01*** |  | ***1.02*** | ***0.54*** | ***1.50*** | ***<0.01*** |
| **AC z-score velocity2,3,4** | |  |  |  |  |  |  |  |  |  |
|  | 0 to 3 months | -1.74 | -3.51 | 0.04 | 0.06 |  | -1.03 | -2.15 | 0.10 | 0.07 |
|  | 3 to 12 months | -0.05 | -0.77 | 0.66 | 0.89 |  | -0.48 | -0.92 | 0.04 | 0.06 |
|  | 12 to 24 months | 0.27 | -0.55 | 1.09 | 0.52 |  | 0.45 | -0.04 | 0.94 | 0.07 |
|  | 24 to 36 months | 0.32 | -0.50 | 1.15 | 0.44 |  | 0.22 | -0.27 | 0.71 | 0.37 |
|  | 36 to 48 months | ***1.97*** | ***1.16*** | ***2.78*** | ***<0.01*** |  | ***0.85*** | ***0.36*** | ***1.33*** | ***<0.01*** |
| **TS z-score velocity2,3,4** | |  |  |  |  |  |  |  |  |  |
|  | 0 -18 months | 0.94 | -0.31 | 2.19 | 0.14 |  | -0.03 | -0.81 | 0.75 | 0.94 |
|  | 18- 36 months | 0.20 | -0.83 | 1.23 | 0.70 |  | 0.16 | -0.48 | 0.80 | 0.62 |
|  | 36-48 months | ***1.59*** | ***0.80*** | ***2.38*** | ***<0.01*** |  | ***0.91*** | ***0.42*** | ***1.39*** | ***<0.01*** |
| **SS z-score velocity2,3,4** | |  |  |  |  |  |  |  |  |  |
|  | 0 -18 months | 1.68 | -0.22 | 3.59 | 0.08 |  | 0.26 | -0.92 | 1.45 | 0.66 |
|  | 18- 36 months | ***1.30*** | ***0.24*** | ***2.36*** | ***0.02*** |  | 0.64 | -0.02 | 1.29 | 0.06 |
|  | 36-48 months | ***1.39*** | ***0.66*** | ***2.12*** | ***<0.01*** |  | ***0.73*** | ***0.28*** | ***1.18*** | ***<0.01*** |

1 Adjusted for maternal age, parity, education level, height, BMI, ethnicity, blood pressure, child’s age and sex. Growth velocities at later periods were additionally adjusted for growth velocities at preceding intervals as well as measurement at birth

2 Adjusted for maternal age, parity, education level, height, BMI, ethnicity, blood pressure, child’s age and sex, and height at 48 months. Growth velocities at later periods were additionally adjusted for growth velocities at preceding intervals as well as measurement at birth

3 Height, BMI and skinfolds z-scores were referenced using World Health Organization Child Growth Standards. AC z-scores were referenced internally using the GUSTO cohort

4 BMI: body mass index; AC: abdominal circumference; TS: triceps skinfolds; SS: subscapular skinfolds

**Supplementary Table 7:** Associations between height, BMI, abdominal circumference, triceps and subscapular skinfold z-score velocities with systolic and diastolic blood pressure z-score at age 48 months.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Systolic BP z-score1** | | | |  | **Diastolic BP z-score1** | | | |
|  |  | **B2** | **95% CI** | | **P value** |  | **B2** | **95% CI** | | **P value** |
|  |  | **low** | **high** |  | **low** | **high** |
| **Height z-score velocity3** | |  |  |  |  |  |  |  |  |  |
|  | 0 to 3 months | 0.23 | -0.13 | 0.59 | 0.21 |  | 0.03 | -0.18 | 0.25 | 0.75 |
|  | 3 to 12 months | -0.004 | -0.07 | 0.06 | 0.89 |  | -0.03 | -0.07 | 0.01 | 0.17 |
|  | 12 to 24 months | -0.02 | -0.10 | 0.06 | 0.60 |  | -0.04 | -0.09 | 0.01 | 0.08 |
|  | 24 to 36 months | 0.03 | -0.05 | 0.11 | 0.41 |  | 0.03 | -0.02 | 0.07 | 0.25 |
|  | 36 to 48 months | 0.01 | -0.06 | 0.07 | 0.86 |  | 0.03 | -0.01 | 0.07 | 0.11 |
| **BMI z-score velocity3,4** | |  |  |  |  |  |  |  |  |  |
|  | 0 to 3 months | -0.01 | -0.09 | 0.05 | 0.64 |  | -0.02 | -0.06 | 0.03 | 0.43 |
|  | 3 to 12 months | 0.05 | -0.02 | 0.13 | 0.17 |  | 0.01 | -0.03 | 0.06 | 0.57 |
|  | 12 to 24 months | 0.06 | -0.02 | 0.14 | 0.13 |  | 0.04 | -0.01 | 0.09 | 0.06 |
|  | 24 to 36 months | 0.05 | -0.02 | 0.12 | 0.16 |  | 0.04 | -0.01 | 0.08 | 0.06 |
|  | 36 to 48 months | ***0.23*** | ***0.15*** | ***0.30*** | ***<0.01*** |  | ***0.08*** | ***0.04*** | ***0.13*** | ***<0.01*** |
| **AC z-score velocity3,4** | |  |  |  |  |  |  |  |  |  |
|  | 0 to 3 months | -0.17 | -0.33 | -0.01 | 0.06 |  | -0.10 | -0.20 | 0.01 | 0.07 |
|  | 3 to 12 months | -0.01 | -0.07 | 0.06 | 0.88 |  | -0.04 | -0.08 | 0.01 | 0.06 |
|  | 12 to 24 months | 0.02 | -0.05 | 0.10 | 0.57 |  | 0.04 | -0.01 | 0.08 | 0.10 |
|  | 24 to 36 months | 0.03 | -0.05 | 0.10 | 0.48 |  | 0.01 | -0.04 | 0.05 | 0.69 |
|  | 36 to 48 months | ***0.18*** | ***0.10*** | ***0.25*** | ***<0.01*** |  | ***0.07*** | ***0.02*** | ***0.11*** | ***0.003*** |
| **TS z-score velocity3,4** | |  |  |  |  |  |  |  |  |  |
|  | 0 -18 months | 0.06 | -0.02 | 0.14 | 0.16 |  | 0.04 | -0.05 | 0.13 | 0.42 |
|  | 18- 36 months | 0.01 | -0.08 | 0.10 | 0.84 |  | 0.01 | -0.05 | 0.06 | 0.79 |
|  | 36-48 months | ***0.14*** | ***0.06*** | ***0.21*** | ***<0.01*** |  | ***0.07*** | ***0.03*** | ***0.12*** | ***<0.01*** |
| **SS z-score velocity3,4** | |  |  |  |  |  |  |  |  |  |
|  | 0 -18 months | 0.09 | -0.02 | 0.20 | 0.12 |  | 0.06 | -0.03 | 0.15 | 0.22 |
|  | 18- 36 months | ***0.11*** | ***0.01*** | ***0.20*** | ***0.03*** |  | 0.05 | -0.01 | 0.11 | 0.09 |
|  | 36-48 months | ***0.12*** | ***0.05*** | ***0.19*** | ***<0.01*** |  | ***0.06*** | ***0.020*** | ***0.10*** | ***0.004*** |

1 Systolic and diastolic blood pressure z-scores derived from age-, sex- and height-specific reference values from American Academy of Pediatric

2 All models were adjusted for maternal age, parity, education level, height, BMI, ethnicity and blood pressure. Growth velocities at later periods were additionally adjusted for growth velocities at preceding intervals as well as measurement at birth

3 Height, BMI and skinfolds z-scores were referenced using World Health Organization Child Growth Standards. AC z-scores were referenced internally using the GUSTO cohort

4 BMI: body mass index; AC: abdominal circumference; TS: triceps skinfolds; SS: subscapular skinfolds

**Supplementary Table 8:** Associations between height, BMI, abdominal circumference, triceps and subscapular skinfold z-score velocities with prehypertension at age 48 months.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **OR1** | **95% CI** | |
|  |  | **low** | **high** |
| **Height z-score velocity2** | |  |  |  |
|  | 0 to 3 months | 1.09 | 0.84 | 1.40 |
|  | 3 to 12 months | 1.32 | 1.02 | 1.72 |
|  | 12 to 24 months | 1.06 | 0.79 | 1.43 |
|  | 24 to 36 months | 1.27 | 0.91 | 1.75 |
|  | 36 to 48 months | 1.22 | 0.95 | 1.57 |
| **BMI z-score velocity2,3** | |  |  |  |
|  | 0 to 3 months | 1.00 | 0.77 | 1.31 |
|  | 3 to 12 months | 1.22 | 0.92 | 1.60 |
|  | 12 to 24 months | 1.35 | 1.01 | 1.82 |
|  | 24 to 36 months | 1.26 | 0.97 | 1.63 |
|  | 36 to 48 months | ***1.52*** | ***1.16*** | ***1.99*** |
| **AC z-score velocity2,3** | |  |  |  |
|  | 0 to 3 months | 0.55 | 0.18 | 1.70 |
|  | 3 to 12 months | 1.04 | 0.81 | 1.34 |
|  | 12 to 24 months | 1.35 | 1.01 | 1.79 |
|  | 24 to 36 months | 0.86 | 0.66 | 1.14 |
|  | 36 to 48 months | ***1.45*** | ***1.11*** | ***1.90*** |
| **TS z-score velocity2,3** | |  |  |  |
|  | 0 -18 months | 1.09 | 0.80 | 1.49 |
|  | 18- 36 months | 1.31 | 0.92 | 1.88 |
|  | 36-48 months | ***1.49*** | ***1.12*** | ***1.97*** |
| **SS z-score velocity2,3** | |  |  |  |
|  | 0 -18 months | 1.06 | 0.69 | 1.63 |
|  | 18- 36 months | ***1.43*** | ***1.01*** | ***2.05*** |
|  | 36-48 months | ***1.40*** | ***1.06*** | ***1.86*** |

1 All models were adjusted for maternal age, parity, education level, height, BMI, ethnicity and blood pressure. Growth velocities at later periods were additionally adjusted for growth velocities at preceding intervals as well as measurement at birth

2 Height, BMI and skinfolds z-scores were referenced using World Health Organization Child Growth Standards. AC z-scores were referenced internally using the GUSTO cohort

3 BMI: body mass index; AC: abdominal circumference; TS: triceps skinfolds; SS: subscapular skinfolds