## Table S1

|  |  |  |  | Outcome, Q3 v. Q1 | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | Unadjusted | | Fully adjusted | |
| Urinary oxidative stress biomarker | Outcome | Q1 Mean | Q3 Mean | Coefficient (95% CI) | P-value | Coefficient (95% CI) | P-value |
| IPF(2a)-III | WAZ Year 1 | 0.48 | 0.91 | -0.16 (-0.26, -0.06) | 0.15 | 0.03 (-0.04, 0.09) | 0.43 |
|  | WLZ Year 1 | 0.48 | 0.91 | -0.14 (-0.24, -0.05) | 0.24 | 0.02 (-0.03, 0.07) | 0.38 |
|  | HCZ Year 1 | 0.48 | 0.91 | 0 (0, 0) | 1 | 0.06 (-0.02, 0.15) | 0.13 |
|  | WAZ Year 2 | 0.48 | 0.92 | -0.08 (-0.16, 0.01) | 1 | 0.02 (-0.01, 0.06) | 0.2 |
|  | WLZ Year 2 | 0.48 | 0.92 | -0.03 (-0.11, 0.04) | 1.36 | 0.1 (0.02, 0.18) | 0.01 |
|  | HCZ Year 2 | 0.48 | 0.92 | 0.05 (-0.03, 0.13) | 0.25 | 0.12 (0.03, 0.22) | 0.01 |
|  | Weight velocity (kg/month) Year 1 to Year 2 | 0.48 | 0.92 | 0 (0, 0.01) | 0.03 | 0 (0, 0.01) | 0.02 |
|  | Head circumference velocity (cm/month) Year 1 to Year 2 | 0.48 | 0.92 | 0 (0, 0.01) | 0.13 | 0 (0, 0.01) | 0.07 |
|  | Change in child WAZ from Year 1 to Year 2 | 0.48 | 0.92 | 0.09 (0.04, 0.14) | 0 | 0.04 (0.01, 0.07) | 0.01 |
|  | Change in WLZ from Year 1 to Year 2 | 0.48 | 0.92 | 0.13 (0.05, 0.21) | 0 | 0.09 (0.02, 0.17) | 0.02 |
|  | Change in HCZ from Year 1 to Year 2 | 0.48 | 0.92 | 0.03 (-0.01, 0.07) | 0.1 | 0.04 (0, 0.08) | 0.04 |
|  |  |  |  |  |  |  |  |
| 2,3-dinor-iPF(2a)-III | WAZ Year 1 | 4.7 | 7.14 | -0.17 (-0.26, -0.08) | 0.05 | 0 (-0.04, 0.03) | 1.14 |
|  | WLZ Year 1 | 4.7 | 7.14 | -0.06 (-0.14, 0.03) | 1.22 | 0 (-0.03, 0.02) | 1.23 |
|  | HCZ Year 1 | 4.7 | 7.16 | -0.09 (-0.17, -0.01) | 0.6 | -0.03 (-0.1, 0.05) | 1.34 |
|  | WAZ Year 2 | 4.68 | 7.16 | -0.12 (-0.35, 0.11) | 1.35 | 0.03 (-0.02, 0.08) | 0.23 |
|  | WLZ Year 2 | 4.67 | 7.16 | 0 (-0.11, 0.11) | 1.01 | 0.03 (-0.1, 0.15) | 0.68 |
|  | HCZ Year 2 | 4.68 | 7.17 | 0 (0, 0) | 1 | 0.05 (-0.03, 0.13) | 0.23 |
|  | Weight velocity (kg/month) Year 1 to Year 2 | 4.68 | 7.16 | 0 (0, 0.01) | 0.02 | 0.01 (0, 0.01) | 0.01 |
|  | Head circumference velocity (cm/month) Year 1 to Year 2 | 4.67 | 7.16 | 0.01 (0, 0.02) | 0 | 0.01 (0, 0.01) | 0.04 |
|  | Change in child WAZ from Year 1 to Year 2 | 4.68 | 7.16 | 0.06 (-0.02, 0.14) | 0.13 | 0 (-0.11, 0.11) | 0.99 |
|  | Change in WLZ from Year 1 to Year 2 | 4.67 | 7.16 | 0.08 (0.01, 0.14) | 0.02 | 0.03 (-0.1, 0.15) | 0.68 |
|  | Change in HCZ from Year 1 to Year 2 | 4.67 | 7.17 | 0.07 (0.02, 0.12) | 0.01 | 0.08 (0.03, 0.12) | 0 |
|  |  |  |  |  |  |  |  |
| iPF(2a)-VI | WAZ Year 1 | 10.05 | 17.63 | -0.16 (-0.26, -0.06) | 0.14 | -0.07 (-0.17, 0.02) | 1.16 |
|  | WLZ Year 1 | 10.05 | 17.63 | -0.02 (-0.19, 0.14) | 1.18 | -0.03 (-0.09, 0.03) | 1.36 |
|  | HCZ Year 1 | 10.02 | 17.68 | 0 (-0.11, 0.11) | 1.03 | 0.08 (-0.04, 0.19) | 0.2 |
|  | WAZ Year 2 | 9.95 | 17.47 | -0.08 (-0.17, 0) | 0.89 | 0.03 (0, 0.06) | 0.08 |
|  | WLZ Year 2 | 9.95 | 17.51 | -0.02 (-0.09, 0.05) | 1.33 | 0.04 (0.01, 0.08) | 0.02 |
|  | HCZ Year 2 | 9.94 | 17.53 | 0 (0, 0) | 1 | 0.06 (-0.01, 0.13) | 0.09 |
|  | Weight velocity (kg/month) Year 1 to Year 2 | 9.95 | 17.47 | 0 (0, 0.01) | 0.03 | 0 (0, 0.01) | 0.02 |
|  | Head circumference velocity (cm/month) Year 1 to Year 2 | 9.95 | 17.51 | 0.01 (0, 0.01) | 0.01 | 0 (0, 0.01) | 0.03 |
|  | Change in child WAZ from Year 1 to Year 2 | 9.95 | 17.47 | 0.05 (0.01, 0.09) | 0.01 | 0.03 (0, 0.06) | 0.03 |
|  | Change in WLZ from Year 1 to Year 2 | 9.95 | 17.51 | 0.06 (0.02, 0.1) | 0.01 | 0.04 (0.01, 0.08) | 0.02 |
|  | Change in HCZ from Year 1 to Year 2 | 9.94 | 17.56 | 0.12 (0.01, 0.22) | 0.02 | 0.12 (0.02, 0.21) | 0.01 |
|  |  |  |  |  |  |  |  |
| 8,12-iso-iPF(2a)-VI | WAZ Year 1 | 8.7 | 18.43 | 0.11 (-0.14, 0.36) | 0.39 | 0.02 (-0.01, 0.05) | 0.19 |
|  | WLZ Year 1 | 8.7 | 18.43 | -0.12 (-0.21, -0.04) | 0.22 | 0.01 (-0.04, 0.06) | 0.63 |
|  | HCZ Year 1 | 8.68 | 18.44 | 0.02 (-0.1, 0.13) | 0.8 | 0.05 (-0.05, 0.15) | 0.31 |
|  | WAZ Year 2 | 8.71 | 18.19 | -0.12 (-0.2, -0.04) | 0.28 | 0.02 (-0.03, 0.06) | 0.49 |
|  | WLZ Year 2 | 8.72 | 18.23 | -0.05 (-0.12, 0.03) | 1.3 | 0.03 (-0.02, 0.08) | 0.23 |
|  | HCZ Year 2 | 8.71 | 18.25 | 0 (-0.1, 0.1) | 0.97 | 0.04 (-0.03, 0.12) | 0.27 |
|  | Weight velocity (kg/month) Year 1 to Year 2 | 8.71 | 18.19 | 0 (0, 0.01) | 0.24 | 0 (0, 0.01) | 0.16 |
|  | Head circumference velocity (cm/month) Year 1 to Year 2 | 8.72 | 18.23 | 0.01 (0, 0.01) | 0.01 | 0.01 (0, 0.01) | 0.01 |
|  | Change in child WAZ from Year 1 to Year 2 | 8.71 | 18.19 | 0.07 (0.02, 0.12) | 0.01 | 0.03 (-0.01, 0.07) | 0.15 |
|  | Change in WLZ from Year 1 to Year 2 | 8.72 | 18.23 | 0.07 (0.01, 0.12) | 0.03 | 0.03 (-0.03, 0.08) | 0.35 |
|  | Change in HCZ from Year 1 to Year 2 | 8.72 | 18.23 | 0.05 (0, 0.09) | 0.04 | 0.06 (0.02, 0.11) | 0 |
|  |  |  |  |  |  |  |  |
| Combined urinary oxidative stress biommarkers | WAZ Year 1 | 14.05 | 25.44 | -0.16 (-0.26, -0.06) | 0.14 | 0 (-0.07, 0.07) | 1.03 |
|  | WLZ Year 1 | 14.05 | 25.44 | -0.11 (-0.18, -0.04) | 0.23 | -0.01 (-0.06, 0.04) | 1.17 |
|  | HCZ Year 1 | 14 | 25.44 | 0.01 (-0.11, 0.12) | 0.91 | 0.07 (-0.03, 0.16) | 0.19 |
|  | WAZ Year 2 | 14.01 | 25.22 | -0.1 (-0.2, 0) | 0.77 | -0.1 (-0.24, 0.04) | 1.21 |
|  | WLZ Year 2 | 14 | 25.26 | -0.03 (-0.11, 0.05) | 1.35 | 0.05 (0, 0.09) | 0.07 |
|  | HCZ Year 2 | 14 | 25.28 | 0 (0, 0) | 1 | 0.06 (-0.01, 0.13) | 0.12 |
|  | Weight velocity (kg/month) Year 1 to Year 2 | 14.01 | 25.22 | 0 (0, 0.01) | 0.04 | 0 (0, 0.01) | 0.02 |
|  | Head circumference velocity (cm/month) Year 1 to Year 2 | 14 | 25.26 | 0.01 (0, 0.01) | 0 | 0.01 (0, 0.01) | 0.01 |
|  | Change in child WAZ from Year 1 to Year 2 | 14.01 | 25.22 | 0.06 (0.02, 0.1) | 0 | 0.04 (0, 0.07) | 0.03 |
|  | Change in WLZ from Year 1 to Year 2 | 14 | 25.26 | 0.07 (0.02, 0.12) | 0.01 | 0.03 (-0.05, 0.11) | 0.45 |
|  | Change in HCZ from Year 1 to Year 2 | 13.98 | 25.26 | 0.06 (0.02, 0.1) | 0 | 0.07 (0.03, 0.11) | 0 |

## Table S2

|  |  |  |  | Outcome, Q3 v. Q1 | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | Unadjusted | | Fully adjusted | |
| Salivary stress biomarker | Outcome | Q1 Mean | Q3 Mean | Coefficient (95% CI) | P-value | Coefficient (95% CI) | P-value |
| Pre to post-stress change in cortisol | WAZ Year 2 | -0.01 | 0 | 0.07 (-0.02, 0.17) | 0.12 | 0.01 (-0.11, 0.14) | 0.84 |
|  | WLZ Year 2 | -0.01 | 0 | 0.1 (0, 0.19) | 0.04 | 0.06 (0, 0.11) | 0.04 |
|  | HCZ Year 2 | -0.01 | 0 | -0.1 (-0.26, 0.05) | 1.24 | -0.09 (-0.21, 0.04) | 1.21 |
|  |  |  |  |  |  |  |  |
| Cortisol residualized gain score | WAZ Year 2 | -0.21 | 0.14 | -0.08 (-0.18, 0.03) | 1.22 | -0.03 (-0.11, 0.04) | 1.36 |
|  | WLZ Year 2 | -0.21 | 0.14 | -0.1 (-0.2, 0.01) | 0.9 | -0.05 (-0.11, 0.01) | 0.98 |
|  | HCZ Year 2 | -0.21 | 0.14 | 0.09 (-0.06, 0.25) | 0.23 | 0.1 (-0.04, 0.23) | 0.17 |
|  |  |  |  |  |  |  |  |
| Pre to post-stress change in sAA | WAZ Year 2 | -4.37 | 0.06 | -0.04 (-0.1, 0.01) | 1.13 | 0 (-0.03, 0.03) | 1.04 |
|  | WLZ Year 2 | -4.37 | 0.06 | 0 (0, 0) | 1 | 0.02 (-0.02, 0.05) | 0.4 |
|  | HCZ Year 2 | -4.38 | 0.07 | -0.01 (-0.1, 0.08) | 1.15 | 0.02 (-0.03, 0.07) | 0.41 |
|  |  |  |  |  |  |  |  |
| sAA residualized gain score | WAZ Year 2 | -51.35 | 27.2 | 0.05 (-0.01, 0.11) | 0.12 | 0 (-0.03, 0.03) | 1.08 |
|  | WLZ Year 2 | -51.35 | 27.2 | 0 (0, 0) | 1 | -0.02 (-0.06, 0.02) | 1.32 |
|  | HCZ Year 2 | -51.38 | 27.52 | 0 (-0.06, 0.07) | 0.92 | -0.03 (-0.08, 0.02) | 1.34 |

## Table S3

|  |  |  |  | Outcome, Q3 v. Q1 | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | Unadjusted | | Fully adjusted | |
| Resting SAM biomarker | Outcome | Q1 Mean | Q3 Mean | Coefficient (95% CI) | P-value | Coefficient (95% CI) | P-value |
| Mean arterial pressure | WAZ Year 2 | 60.89 | 68.89 | 0.17 (0.05, 0.3) | 0.01 | 0.03 (-0.02, 0.09) | 0.2 |
|  | WLZ Year 2 | 60.89 | 68.89 | 0.13 (0.04, 0.23) | 0.01 | 0.05 (-0.01, 0.1) | 0.11 |
|  | HCZ Year 2 | 60.89 | 68.89 | 0.04 (-0.07, 0.15) | 0.52 | -0.01 (-0.12, 0.1) | 1.13 |
|  |  |  |  |  |  |  |  |
| Mean resting heart rate | WAZ Year 2 | 98.67 | 118 | -0.2 (-0.35, -0.05) | 0.37 | 0 (-0.05, 0.05) | 1.12 |
|  | WLZ Year 2 | 98.5 | 118 | -0.15 (-0.31, 0.01) | 0.95 | -0.01 (-0.06, 0.05) | 1.18 |
|  | HCZ Year 2 | 98.42 | 118 | 0.01 (-0.07, 0.09) | 0.83 | 0.07 (-0.01, 0.15) | 0.11 |

## Table S4

|  |  |  |  | Outcome, Q3 v. Q1 | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | Unadjusted | | Fully adjusted | |
| Methylation site | Outcome | Q1 Mean | Q3 Mean | Coefficient (95% CI) | P-value | Coefficient (95% CI) | P-value |
| Entire promoter region (39 assayed CpG sites) | WAZ Year 2 | 0.22 | 0.48 | -0.01 (-0.07, 0.05) | 1.19 | 0 (-0.03, 0.04) | 0.85 |
|  | WLZ Year 2 | 0.22 | 0.48 | 0.03 (-0.03, 0.08) | 0.3 | 0.01 (-0.03, 0.04) | 0.74 |
|  | HCZ Year 2 | 0.22 | 0.48 | 0.02 (-0.06, 0.1) | 0.6 | -0.01 (-0.08, 0.05) | 1.27 |
|  |  |  |  |  |  |  |  |
| NGFI-A transcription factor binding site (CpG site #12) | WAZ Year 2 | 0 | 1.21 | 0.03 (-0.06, 0.12) | 0.49 | 0 (-0.06, 0.05) | 1.08 |
|  | WLZ Year 2 | 0 | 1.21 | 0.06 (-0.12, 0.25) | 0.53 | 0.04 (-0.07, 0.16) | 0.48 |
|  | HCZ Year 2 | 0 | 1.21 | -0.02 (-0.11, 0.07) | 1.27 | -0.04 (-0.13, 0.04) | 1.34 |